University of Mary Hardin Baylor
Project # 1905900

Submittal Transmittal
[For Subcontractor]

Telephone: Fax: **January 08, 2013**

Date: 1/8/2013 **Transmittal No: 0517**

Transmitted To:	Jay Vanadore Berg Electric 4509 Freidrich Lane, Ste 105 Austin, TX 78744 Tel: 512.447.3800 Fax: 512.447.3811	**Transmitted By:**	Christine Fuentes Turner Construction Company 2001 N. Lamar, Suite 100 Dallas, TX 75202 Tel: 214-721-8400 Fax: 214-721-8490

Submittal Package No	Description	Due Date
0001 - 27 13 43.53 - 1	CATV System PD	

Items	Qty	Spec	Item #	Rev	Type	Description	Notes	Item Action
001	1	27 13 43.5	00595	0	Product Data / Cut Sheet	CATV System PD Resubmittal		Approved

Cc:	Company Name	Contact Name	Copies	Fax Number	Notes

Remarks

Signature **Signed Date**

University of Mary Hardin Baylor
Project # 1905900

Submittal Transmittal
[For Reviewer]

Telephone: Fax: **December 03, 2012**

Date: 12/3/12 **Transmittal No: 0434**

Transmitted To:	Mark Olsen Populous 300 Wyandotte, Suite 200 Kansas City, MO 64105 Tel: 816.329.4283 Fax: 816.329.4543	**Transmitted By:**	Christine Fuentes Turner Construction Company 2001 N. Lamar, Suite 100 Dallas, TX 75202 Tel: 214-721-8400 Fax: 214-721-8490

Submittal Package No	Description	Due Date
0001 - 27 13 43.53 - 1	CATV System PD	12/17/12

Item	Qty	Spec	Sub Section	Item #	Rev	Type	Description	Notes	Item Action AP	AN	RR	RJ
001	1	27 13 43.53		00595	0	Product Data / Cut Sheet	CATV System PD Resubmittal		☐	☐	☐	☐

AP=Approved
AN=Approved as noted
RR=Revise and resubmit
RJ=Rejected

Cc:	Company Name	Contact Name	Fax Number	Copies	Notes

Remarks

Signature **Signed Date**

University of Mary Hardin Baylor Stadium and Student Union – UMHB
Date: 12/3/12
Architect: Populous, 300 Wyandotte Suite 200, Kansas City, MO 64105
Construction Manager: Turner Construction, 2001 N. Lamar St. Suite 100, Dallas, TX 75202
Subcontractor: Berg Electric Corp., 4509 Friedrich Lane, Suite 105, Austin, TX 78144
Supplier:
Manufacturer:
Submittal Number: 27 23 43.53-1-001
Spec Section: 27 23 43.53 CATV Distribution System
Other:

Contractor's Review:	**Architect and CM Review and Approval:**
☑ Reviewed for compliance ☐ Notes:	☑ A – Approved ☐ AN – Approved as Noted ☐ NAR – No Action Required ☐ R – Rejected ☐ R&R – Revise & Resubmit ☐ Notes:

☐ APPROVED ☐ APPROVED AS NOTED
☐ REVISE AS NOTED AND RESUBMIT
☐ REJECTED / RESUBMIT AS SPECIFIED
☐ NO ACTION TAKEN ☒ REVIEWED

Notations Do Not Authorize Changes To Contract Sum

Submittals are reviewed, processed and executed per Division One of the Specifications.

Submittal was reviewed for design conformity and general conformance to the contract documents only. Contractor is responsible for confirming and correlating dimensions at the job site for tolerances, clearances, quantities, fabrication processes and techniques of construction, coordination of his work with other trades and full compliance with the contract documents.

Date 01/07/2013 By Mark Olsen

Populous, Inc.

Wrightson, Johnson, Haddon & Williams, Inc. has reviewed the general conformance of this submission's technical design conformity only, and is of the opinion and recommends the Submission be marked:

- ☐ **No review Action Required**
- ☒ **No Exceptions Taken**
- ☐ **Rejected, Submit Specified Item**
- ☐ **Rejected, Revise and Resubmit**
- ☐ **Make Corrections Noted, No Resubmission Required**
- ☐ **Make Corrections Noted, Submit Corrected Copy**

Notations do not relieve the contractor from compliance with requirements of the contract documents. Contractor is responsible for provision of all information necessary for this review; confirming and correlating dimensions for tolerances and clearances; product quantities; fabrication processes and techniques of construction; and coordination of this work with other trades.

Gary White

DATE 01-03-2013

UMHB

CATV 27 13 43.53

Ref	Manufacturer	Model	Description
	Section 27 13 43.53 CATV		
2.3	**ANTENNA SYSTEM**		
1.14	CEF/BEF	Allowance	
2.4	**HEADEND**		
PART 2	**PRODUCTS**		
2.3	**ANTENNA SYSTEM**		
A	Pixel Technologies	AFHD-4	AM/FM Antenna
	Pixel Technologies	MBA-12	Inline Amplifier
	Pixel Technologies		Power Supply for MBA-12
	Bonder Tongue	DA-33	Extender Amplifier (AMP 3)
	Pixel Technologies	MBS-4	RTO
	Pixel Technologies	QPLEX	Quadplexer
	Pixel Technologies		Power Supply for Quadplexer
	Pixel Technologies	A/R	Fixed Attenuators
	Pixel Technologies		Surge Protector
B	Rhon Antenna Products		Antenna Mast and Supports
C	Microwave Filter Co.	A/R	Band Pass Filter (BPF)
2.4	**HEADEND**		
A	Adtec	Digital Media Hub HD Pro-02-S	HD/SDI Encoder (ENC)
	Adtec	Digital Media Hub HD Pro-HD-KEY	
B	Drake	MQM 1000	Frequency Agile Modulator (FAM) - QAM w/ 2-ASI
C	ATX	QMP1000-**GP	Forward Path RF Chassis Mounted Amplifier (AMP1):
D	ATX	ATXQMP200-**L	Return Path RF Chassis Mounted Amplifier (AMP2):
E	ATX	ATX MPTX8-**	Forward Path Optical RF chassis mounted Transmitter (FOTX)
F	ATX	MPRX-8	Return Path Optical RF chassis mounted Receiver (FORX)
G	ATX	MP3BA	Active Chassis
H	ATX	MPAC-110	Power Supply for Active Chassis:
I	ATX	MP2	2-WaySplitter/Combiner; (SPL1/CMB1):
J	ATX	MP4	4-WaySplitter/Combiner; (SPL2/CMB2)
K	ATX	MPT8	8-WaySplitter/Combiner; (SPL3/CMB3):
L	ATX	MP-16	16-Way Splitter/Combiner; (SP•/CMB4):
M	ATX	MP*DC Series	Directional Coupler (DC)
N	ATX	MPMF-3	MCXto F Transition Module
O	ATX	FLJ1A1A-01 QM99 Series	Headend Jumpers
P	ATX	PCI CD-92002-*R	Channel Elimination Filter (CEF)
Q	ATX	BWH & BWL 9060 & 9050	Band Elimination Filter (BEF)

UMHB

CATV 27 13 43.53

Ref	Manufacturer	Model	Description
R	Evertz	3400DS*-*Series	Optical Splitters 1x8
S	Evertz	3400FR	Passive Optical Frame w/supply
T	Radio Design Labs	FP-UBC6	
U	Radio Design Labs	ST-MX3	Mono Summing Amplifier (SUM)
	Radio Design Labs	DRA-35S	Din Rail Adapter
V	LG	22LE 5300	Video Monitor/Receiver (MON), 22" LED
	Peerless	SA740P	Articulating VESA Mount custom mounted to black Middle Atlantic steel folded edge rack panel
W	AVP	WK-U216E2-Z	Custom Encoder Patch Panel
X	ADC	R2V-STS	Standard Video Patch Cords
	ADC	G3V-STS	Standard Video Patch Cords
	ADC	BK6V-STS-B	Video Patch Cord with patch panel plug connector at one end and BNC male
	ADC	R3	Audio Patch cords
	ADC	G3B-2	Audio Patch cords
	ADC	B4B	Audio Patch cords
	ADC	PPH	Patch Cable Holders
	ADC	FPC	Fiber Patch Cords
2.5	**DISTRIBUTION**		
A	ATX	QFN 000A-** GP 2W	CATV Fiber Node Receiver/Amplifier (CATV NODE):
	ATX	QFRL/DFB1-23	Return Laser
B	ACI	SST-1-S4CW-01	Drop Amplifier- Single Port
C	ACI	SST-4-S4CW-01	Drop Amplifier- Four Port
2.6	**SPLITTERS, COMBINERS AND PASSIVE DEVICES**		
A	ATX	DigiMAX DM2R	Two-Way Splitter/Combiner; (SPLA/CMBA)
B	ATX	DigiMAX DM3	Three-Way Splitter/Combiner; (SPLB/CMBB)
C	ATX	DigiMAX DM4	Four-Way Splitter/Combiner; (SPLc/CMBc)
D	ATX	DigiMAX DM8V	Eight-Way Splitter/Combiner; (SPLD/CMBD)
E	ATX	DigiMAX DMDC**Series	Directional Coupler (DC)
F	TONER	TMTX108-**	Modular Multi-Taps
	TONER	TMTX-EQ-*	Equalizer Plate Series
	TONER	MTX-3H	Housing
	TONER	TMTX-6H	Housing
G	PANDUIT	CF1064	Drop Outlet frame
	PANDUIT	CMFSRxx	self-terminating F-connector
	PANDUIT	106 Duples	face plate E/B
H	Bonder Tongue	FAM Series	Fixed Attenuator (PAD)
2.7	**SPLITTERS, COMBINERS AND PASSIVE DEVICES**		
A	Middle Atlantic	WRK-44-32	Equipment Rack
	Middle Atlantic	MW-4FT	4 fans per cabinet
	Middle Atlantic	Fan 4 ½".	Fan

UMHB

CATV 27 13 43.53

Ref	Manufacturer	Model	Description
	Middle Atlantic		Fan Guard
	Middle Atlantic	SPN-44-312	Side Panel
	Middle Atlantic		Solid Rear Door
	Middle Atlantic	RIB -*	4" riser base
	Middle Atlantic	WL-60	Magnetic Work Light:
	Waber	Waber 903CB	Front Rack Mounted Power Strip
	Middle Atlantic	HHCM-2	horizontal cable management
B	Middle Atlantic	EB series	Misc vent panels
C	RCI	AVD series	Custom and/or Engraved Panels
D	Middle Atlantic	PD-1020J-IG	Internal Electrical Rack Distribution
E	APW	ICBB78	Isolated Ground Buss Bar: (800-821-0019)
F	Middle Atlantic	PD 1220C-NS	Tele/Data Distribution Power strip:

2.8 CABLING AND ACCESSORIES

A	CommScope	QR 320 JCA	SAT, AM/FM, and TV Off-Air Antenna Cable
	CommScope	QR 320 JCASS	SAT, AM/FM, and TV Off-Air Antenna Cable
B	CommScope	F59 HEC-2VV	Head-end Cable (RG59
C	CommScope	F1160BVR	Trunk and Feeder Cable (RG11)
	CommScope	2287K	Trunk and Feeder Cable (RG11) - Plenum
D	CommScope	F6SSV	Drop Cable
	CommScope	F11SSV	Drop Cable
	CommScope	2227K (Plenum)	Drop Cable
	CommScope	2287K (Plenum)	Drop Cable
E	Belden	1694A	Video Cable
F	Belden	1266A	Audio Cable
G	L-COM	Single Mode Fiber Attenuators	Fiber Attenuators
H			Broadcast Truck Pedestal
	WWD		Broadcast Truck Panels
I	Belden	1695A	Broadcast Plenum rated Video Cable
			flooded & jacketed audio snake cable Audio Cable 6 pair
J	Belden	YR48788	Broadcast Audio Cable:
	Belden	1815R	Audio Cable 4 pair
	Belden	1814R	Audio Cable 2 pair
K	AFL Telecommunicatns	CR0069441001-AIAP	Single-Mode Optical Fiber Cable:
L	Carlon		Fiber Optic Cable Inner Duct:
M	Panduit	Fiber Pig Tails	Fiber Optic Components
N	Panduit	FWME2 Series	Wall Mount Fiber Optic Interconnect Box (FTB)
			FSTHS Series Splice Module Holders & FSTK Series Splice Trays
			Adapter Panel: Panduit FAP Series APC Adapter Panels
O	Panduit	FRME4 Series.	Fiber Optic Rack Mount Enclosure Provide with Panduit FSTHS Series Splice Module Holders & FSTK Series

UMHB

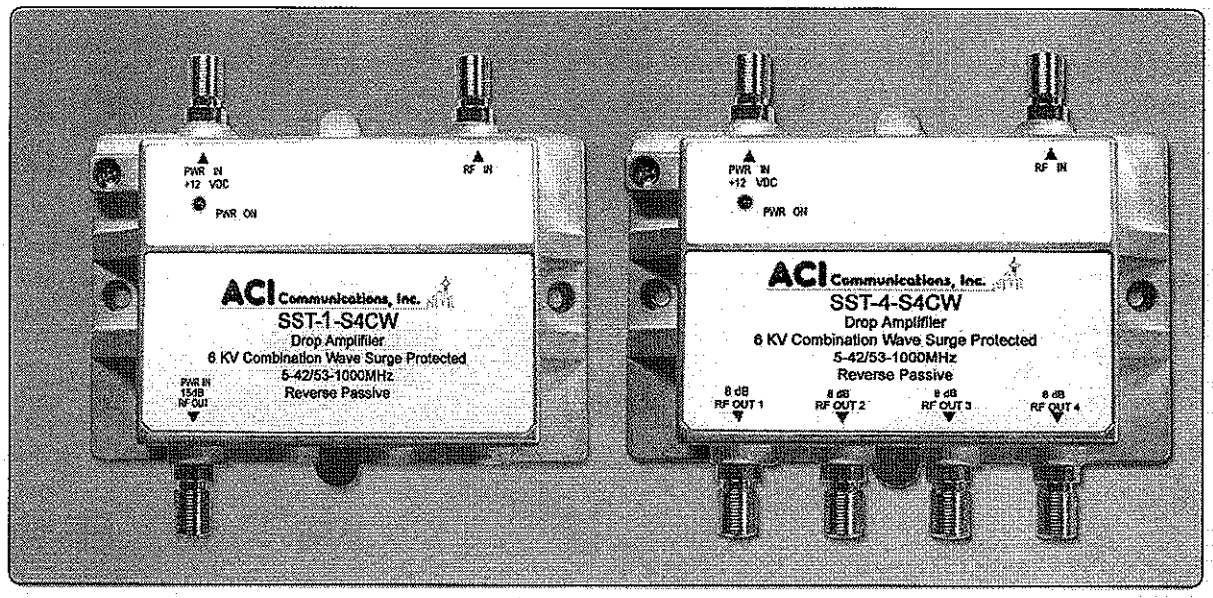
CATV 27 13 43.53

Ref	Manufacturer	Model	Description
			Splice Trays.
	Burtek	TBD	50 Pair CAT5-Coaches IC JBC/50YD line
			Adapter Panel: Panduit FAP Series APC Adapter Panels
P	Liberty Wire	CM-RG Series	F Connector
Q	Liberty	CM-RG Series	BNC Connector
R	Neutrik	NC3MD-L-1-B	XLR-3M
	Neutrik	NC3FD-L-1-B	XLR-3F
S	Gilbert Engineering	GGB-4U	Ground Block
	Gilbert Engineering	G-SPB-GLU	Ground Block

ACI Communications, Inc.

Serving the CATV Industry Since 1986

Drop Amplifiers



The ACI Communications Drop Amplifier line consists of house-type active devices that deliver superior performance up to 1 GHz in today's expanding RF telecommunications networks.

The Drop Amplifier provides additional gain at the customer premise when needed as a result of long drops, multiple TV outlets, or multiple service requirements.

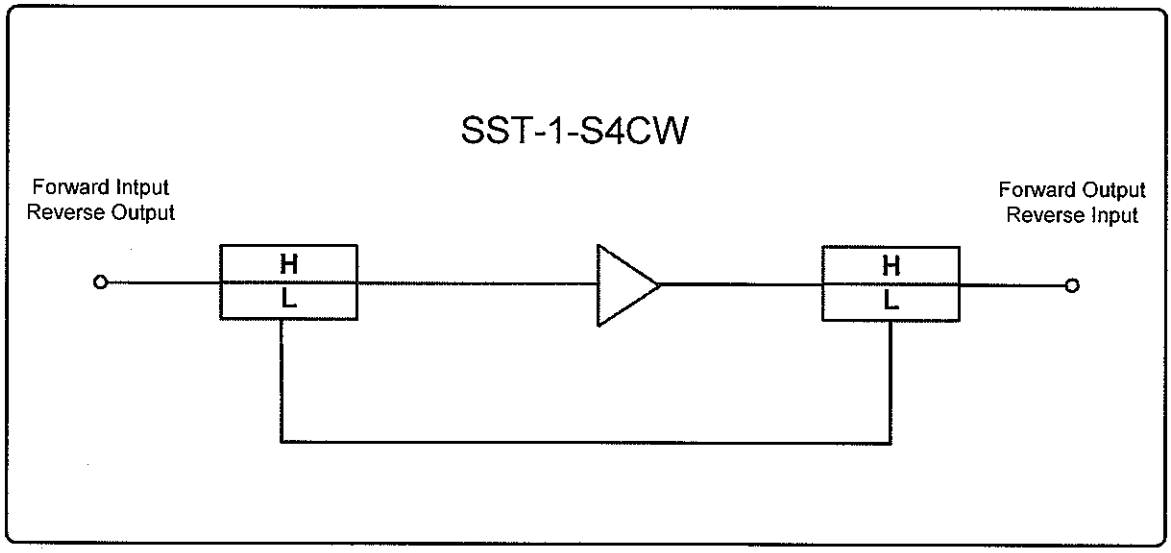
The Drop Amplifier is available in one and four output, with GaAsFET technologies, and is configured for reverse path passive transmission. The one output version has a 15 dB output gain, and the four output version has a typical 8 dB output gain per-port.

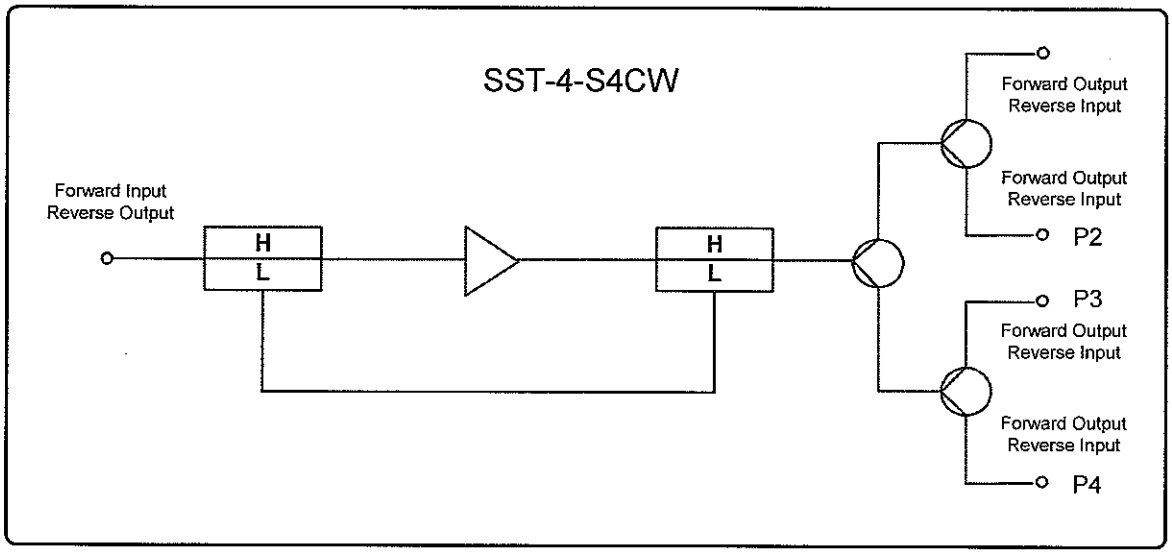
The Drop Amplifier allows very versatile deployment. To install, simply locate and mount the amplifier, and then connect the RF input cable and the RF output cable(s). Since the amplifier is a DC powered device, powering may be achieved in two different ways. It can either be powered directly in a co-located situation through an externally mounted transformer or it may be powered remotely by an externally mounted transformer via the cable through a power inserter at the TV set location.

Features

- Two-way transmission through passive reverse
- 1 GHz bandwidths
- 15.0 forward gain on the one port, 8.0 dB gain on each of the four ports
- GaAsFET technologies
- Superior performance specifications for full channel loading at design bandwidth
- Low noise and excellent distortion performance
- Low power consumption
- Die-cast aluminum housing for excellent heat dissipation
- Perfect for both indoor and outdoor applications
- Remote or co-located powering capability
- 6 Kv combination wave surge protection on amplifier – all ports (IEEE587 category B3)
- 6 Kv combination wave surge protection on the transformer (IEEE587 category B3).
- High performance "F" connectors – SCTE compliant

ACI Communications, Inc.





ACI Communications, Inc.

ACI Communications, Inc.,			Drop Amplifiers 1 & 4 Port		
STATION PARAMETERS			1 PORT	4 PORT	
	CONDITIONS	UNITS	SPECIFICATIONS		NOTES
FORWARD		MHz	53 to 1000		
Gain		dB	15.0 ±0.5	8.0 ±0.5	
Flatness		±dB	0.5	0.5	
Slope		±dB	1	1	
Output impedance		ohm	75	75	
Return loss	Worst case / typical	dB	18 / 20	18 / 20	
Noise figure	Worst case within specified bandwidth	dB	3.5	5.0	
RF port-to port isolation		dB	NA	25	
RF port-to power port isolation		dB	≥55	≥55	
Group Delay (n = Sec / 3.58 MHz)					
Channel 2-5		ns	<20	<20	
Channel 6 & up		ns	<5	<5	
Power consumption		Watts	3	3	
Reverse (Passive)		MHz	5 to 42		
Insertion loss	Max	dB	1	8	
Return loss	Worst case / typical	dB	18 / 20	18 / 20	
Flatness		±dB	0.5	0.5	
Group Delay (n = Sec / 1.5 MHz)					
5 to 40 MHz		ns	<20	<20	
550 MHz analog channel loading, 79 channels +320 MHz digital channel loading, 256 QAM at -6dBc relative to its associated visual carrier					
Station Output Levels					
Levels out		dBmV	25	18	
Station Distortions (Worst Case)					
Composite Triple Beat (CTB)		-dBc	75	75	
Cross Modulation (XMOD)		-dBc	75	75	
Composite Second Order (CSO)		-dBc	65	65	
HUM Modulation		≥dB	80	80	
Physical Information					
Mechanical F-port seal		psi	10	10	
Operating temperature range		°F	-40 to +140	-40 to +140	
RFI / EMI isolation		dB	≥120 dB		
Surge protection	All Ports IEEE C62.41-1991 Category B3 6 KV, 2 KA	KV	6	6	
Dimensions	Height x Width x Depth	in. (cm)	5.0 x 4.8 x 1.5 (132.7 x 12.1 x 3.8)		
Weight	With transformer	lbs. (kg)	2.2 (1.0)		

Confidential
Information contained in this document is subject to change without notice.
Revision Date: 07/23/04

ACI Communications, Inc.

Configuration Worksheet

SST Combo Wave Configuration Sheet

Customer: _____

Created By: _____ Order Date: _____

ORDERING MATRIX June 7, 2005

Position	1	2	3	4	5	6	7	8	9	10	11	12	13
MODEL NUMBER	S	S	T	-		-	S		C	W	-		

1-2-3 [S][S][T] MODEL
SST - Drop Amplifier

5 [ ] NUNBER OF OUTPUT PORTS
1 = 1 Output
4 = 4 Outputs

7-8 [S][ ] FREQUENCY SPLIT
S4 = Subsplit (42 - 53)
S6 = Supsplit (65 / 85)

12-13 [ ] TRANSFORMER OPTIONS
Blank = SST amplifier only
01 = W/120 VAC / 12 VDC tansformer
02 = W/230 VAC / 12 VDC transformer

OPTIONAL ACCESSORIES (sold separately)

Part Number	Description
PI - 30	Cable power inserter 12 - 30 VDC (F ports)
120 V - U	Transformer 120 VAC / 12 VDC (F ports)
230 V - A	Transformer 230 VAC / 12 VDC (F ports)

NOTES:

Electrical Safety (North American example)

The wall mounted (Electrical outlet) power supply requires 120VAC, 60Hz, 1-ampere maximum input power source, with proper ground. Please refer to local electrical codes. The amplifier requires 12VDC at 300ma. The power transformer should be UL type 2 rated.

It is recommended that the power pack not be installed on a circuit that is shared with such electrical noise sources as motors, starting solenoids, toasters, or equipment that operates intermittently with high starting currents.

ACI Communications, Inc.
23307 - 66th Avenue South - Kent, WA - 98032
Phone: (253) 854-9802 - Fax: (253) 813-1001 - www.acicomms.com

ACI Communications, Inc. reserves the right to discontinue the manufacture or change specifications without prior notice on any parts illustrated in this data sheet. Current drawings are available upon request.

RevD CW 06-07-05 **ACI Communications, Inc.**
Printed in U.S.A.

Audio Patching Systems

Accessories

Whatever the accessory you need for your audio patchbay, the quality source is ADC. Products available include patch cords, connectors and jacks, designation strip kits, and more.

High-Performance Audio Patch Cords

ProPatch audio patch cords are engineered for flawless performance and durability. Nickel plating protects plugs against corrosion and ensures smooth insertion, and the exclusive dielectric compound between conductors provides low capacitance for the best signal performance. The flexible cord drapes neatly without kinking, and the plug is molded directly onto the cord for outstanding strain relief.

All ADC patch cords are designed to meet MIL-P642 and are machined after molding for perfect concentricity, ensuring consistent, reliable jack operation.

Features

- Meets demanding MIL-J641 and MIL-P642 standards for plug compliance
- Precision WECO 310 (longframe) and bantam plugs assure proper jack performance
- Quad-star construction for low noise performance
- Models for analog or digital audio
- Standard lengths from .6 m (2 feet) to 1.8 m (6 feet). Other lengths available on request
- Colors include red, green, blue, or black. Some cords also available in yellow or gray
- Conversion patch cords for RS-422 to RJ45. (Conversion patch cords for longframe to bantam, single to dual, are also available. Please contact ADC.)

Catalog Number

Color

R	Red
G	Green
B	Blue
Y	Yellow*
BK	Black
GY	Gray*
DA	Digital audio (black only)

* Non-standard colors. Please contact ADC for these and other non-standard colors.

Cable Length

LEAVE BLANK	Longframe plug
B	Bantam plug

Cable Length

2	.6 m (2')
3	.9 m (3')
4	1.2 m (4')
6	1.8 m (6')

Dual patch cords are available.
Add a "2" after length. For example,
R22 = Red (2') dual longframe
R22B = Red (2') dual bantam

Video Patch Cords

Ordering Information

Description	Ordering Number			
ST Series High-Definition Video Cords				
ST Standard Size Plug to Standard Size Plug	**2 ft./ .61m**	**3 ft./.93m**	**4 ft./1.22m**	**6 ft./1.83m**
Red	R2V-STS	R3V-STS	R4V-STS	R6V-STS
Green	G2V-STS	G3V-STS	G4V-STS	G6V-STS
Blue	B2V-STS	B3V-STS	B4V-STS	B6V-STS
Black	BK2V-STS	BK3V-STS	BK4V-STS	BK6V-STS
Orange	O2V-STS	O3V-STS	O4V-STS	O6V-STS
Yellow	Y2V-STS	Y3V-STS	Y4V-STS	Y6V-STS
Violet	V2V-STS	V3V-STS	V4V-STS	V6V-STS
White	W2V-STS	W3V-STS	W4V-STS	W6V-STS
ST Standard Size Plug to BNC				
Red	R2V-STS-B	R3V-STS-B	R4V-STS-B	R6V-STS-B
Green	G2V-STS-B	G3V-STS-B	G4V-STS-B	G6V-STS-B
Blue	B2V-STS-B	B3V-STS-B	B4V-STS-B	B6V-STS-B
Black	BK2V-STS-B	BK3V-STS-B	BK4V-STS-B	BK6V-STS-B
Orange	O2V-STS-B	O3V-STS-B	O4V-STS-B	O6V-STS-B
Yellow	Y2V-STS-B	Y3V-STS-B	Y4V-STS-B	Y6V-STS-B
Violet	V2V-STS-B	V3V-STS-B	V4V-STS-B	V6V-STS-B
White	W2V-STS-B	W3V-STS-B	W4V-STS-B	W6V-STS-B
ST Midsize Plug to Midsize Plug				
Red	R2V-STM	R3V-STM	R4V-STM	R6V-STM
Green	G2V-STM	G3V-STM	G4V-STM	G6V-STM
Blue	B2V-STM	B3V-STM	B4V-STM	B6V-STM
Black	BK2V-STM	BK3V-STM	BK4V-STM	BK6V-STM
Orange	O2V-STM	O3V-STM	O4V-STM	O6V-STM
Yellow	Y2V-STM	Y3V-STM	Y4V-STM	Y6V-STM
Violet	V2V-STM	V3V-STM	V4V-STM	V6V-STM
White	W2V-STM	W3V-STM	W4V-STM	W6V-STM
ST Midsize Plug to BNC				
Red	R2V-STM-B	R3V-STM-B	R4V-STM-B	R6V-STM-B
Green	G2V-STM-B	G3V-STM-B	G4V-STM-B	G6V-STM-B
Blue	B2V-STM-B	B3V-STM-B	B4V-STM-B	B6V-STM-B
Black	BK2V-STM-B	BK3V-STM-B	BK4V-STM-B	BK6V-STM-B
Orange	O2V-STM-B	O3V-STM-B	O4V-STM-B	O6V-STM-B
Yellow	Y2V-STM-B	Y3V-STM-B	Y4V-STM-B	Y6V-STM-B
Violet	V2V-STM-B	V3V-STM-B	V4V-STM-B	V6V-STM-B
White	W2V-STM-B	W3V-STM-B	W4V-STM-B	W6V-STM-B

Note: Standard patch cord colors are red, green, blue, and black. These color cords are available in the standard lengths shown above; please contact ADC for additional custom lengths.

For patch cords in orange, yellow, violet, and white, please contact ADC for leadtime, lengths available and order minimums.

mediaHUB™-Pro 02

MPEG 2 Standard and High Definition Encoder

The mediaHUB-Pro 02 is a real-time Contribution-quality MPEG 2 Standard and High Definition encoder. It is designed to support the most demanding Contribution, ATSC, DVB and IPTV MPEG 2 Distribution applications; the Studio version of the mediaHUB-Pro 02 encodes Cable Labs VOD and DPI compliant MPEG 2 Transport Streams. The Pro's auto-detect HD/SD-SDI video input eliminates the need for user resolution and frame rate configuration. It boasts dual stream on-board audio encoding of MPEG 1 Layer 2 audio including support for Dolby E and Dolby 5.1 passthrough. Optional dual stream Dolby Digital AC3 encode can be added with a simple software key either at the factory or in the filed. Standard Adtec transport interfaces include three ASI copper outputs with included support for transport over GIGE. Audio inputs include AES3 Digital Audio, SDI and Analog audio. BISS 1 and BISS E encryption is an option that can be field activated with a simple software key, no hardware required. The Pro's user interfaces include a comprehensive easy-to-use front panel interface, on-board Web application server for configuration and monitoring plus SNMP 2.0C MIBS. Unique features of the Studio version include a built-in confidence decoder with HD/SD-SDI, HDMI and D1 outputs.

options

MEDIAHUB-PRO-02: Offers standard definition MPEG 2 encoding.

MEDIAHUB-PRO-02-S: Studio version of encoder adds confidence decoder, RS422 control and 160GB hard drive.

MEDIAHUB-PRO-HD-KEY: Enables gigh definition MPEG 2 encoding. Software Key. Field Upgradable.

MEDIAHUB-PRO-DOLBY-KEY: Adds dual (two-pairs) stereo Dolby Digital AC3 encode. Software Key. Field Upgradable

BISS: BISS 1 and BISS E Encryption

related products

DTA-3050:
Digital turn around router for transporting MPEG 2 via ASI and IP sources to ASI, SMPTE-310 and IP outputs

Soloist-HD Pro:
Broadcast quality high definition MPEG 2 and AVC (MPEG 4 Part 10 - H.264) decoder for broadcast applications

features & benefits

MPEG 2 SD Contribution Quality Encoding: Support for MPEG 2 SD 4:2:0 and 4:2:2 Contribution, Distribution and Studio encoding quality. with mediaHUB-Pro 02 and mediaHUB-Pro 02-S.

MPEG 2 HD Contribution Quality Encoding: Optional upgrade to MPEG 2 HD 4:2:0 encoding with a simple field upgrade, no hardware exchange required.

SDI Plug and Encode: Automatic SDI detection (HD and SD) of standards and frame rates. (HD required HD feature key)

High and Standard Definition Video: One box - both formats. (HD requires the purchase of MEDIAHUB-PRO-HD-KEY, factory or field upgrade)

High Performance Audio Encoding and Passthrough: Encode two stereo pairs of MPEG 1 Layer 2 audio, passthrough Dolby E, or Dolby Digital 5.1 with optional dual stream Dolby Digital AC3 audio encoding.

Easy to Use: Rapidly and accurately configure mediaHUB-HD Pro via the front panel, on-board web application server or SNMP.

Highest quality MPEG 2 HD and SD: When it comes to the best on-air look, mediaHUB-HD Pro delivers with excellent quality Standard and High Definition video encoding. (HD requires purchase of MEDIAHUB-PRO-HD-KEY, factory or field upgrade)

Monitor: Web Browser, front panel LED and LCD visual alarms, SNMP traps and event logging are all standard.

mediaHUB-Pro 02-S added Features

Create VOD and DPI-ready Files: Create Cable Labs compliant Transport streams for use with VOD and DPI.

Control with Accuracy: mediaHUB-HD Pro can control VTR sources or be controlled by a non linear editor (NLE) via RS-422 for frame accurate mark in/out encoding. (Studio version only)

Hard Drive Capture: Frame accurately capture encodes for VOD and DPI applications.

Decode While Encode (DWE): Built-in confidence decoder nearly eliminates the need for external local decoders.

Adtec Digital US Sales: 615.256.6619 International Sales 904.394.0389 www.adtecinc.com 02-2011

mediaHUB™-Pro 02 *MPEG 2 Standard and High Definition Encoder*

technical specifications

Encoder Video Profiles
MPEG 2 SD Profile 1: Adaptive Field Frame (AFF) ISO13818-2 MP@ML
MPEG 2 SD Profile 2: AFF ISO13818-2 422P@ML
MPEG 2 HD Profile 2: ISO13818-2 MP@HL (1920 x 1080 or 1280 x 720)

Video Encoding Data Rates
MPEG 2 MP@ML SD / 1 Mbs-15 Mbs - NTSC and PAL
MPEG 2 422P@ML SD / 1 Mbs-50 Mbs - NTSC and PAL
MPEG 2 MP@HL / 7 Mbs-59.5 Mbs

High Definition Video Frame Formats
720p24, 720p50, 720p60, 1080i50, 1080i60

High Definition Video Encode Resolutions
Horizontal Resolutions
1280, 1920 (1440)
Vertical Resolutions
720, 1080

Standard Definition Video Frame Formats
480i, 576i, 480p, 567p

Standard Definition Video Encode Resolutions
Horizontal Resolutions
720, 704, 640, 544, 528, 480, 352
Vertical Resolutions
480, 576

Video Processing
Encoder Filters (SD Only)
Temporal & Spatial (Median)
Time Base Corrector (TBC) on SDI inputs for SD only
Chroma filtering and scaling for NTSC/PAL

Encoder Video Input
Standard Definition (SD) Video Inputs (Encoder)
Analog NTSC and PAL Composite (BNC)
SDI (SMPTE 259M) with embedded audio (SMPTE 272M)
Auto detect SD 270Mbps for SD
D1 Encoding Only - no internal up-conversion.

High Definition (HD) Video Inputs (Encoder)
HD-SDI input video, (SMPTE 292M) with embedded audio (SMPTE 299M)
Auto detect HD 1.485 Gbs.

* SDI and HD-SDI are the same connector with auto standard (resolution and frame rate) detection.

Encoder Audio Profiles
Dolby Digital 2.0 (AC3) dual stream encoders option.
MPEG1 Layer 2 dual stream encoders included
Dolby E, Dolby 5.1 and Dolby Digital 2.0 (AC3) passthrough

Encoder Audio Input
Analog Audio 1 Stereo Balanced (5-Pin Removable Screw Terminal)
Analog Audio 2 Stereo (SAP) Balanced (5-Pin Removable Screw Terminal)
AES3-1 digital audio input uncompressed (PCM) or compressed bit stream passthrough from external Dolby 2.0, 5.1 or Dolby E encoders (BNC - 75 Ohm). Includes compressed bit stream output.
AES3-2 digital audio input uncompressed (PCM) or compressed bit stream passthrough from external Dolby 2.0, 5.1 or Dolby E encoders (BNC - 75 Ohm). Includes compressed bitstream output.
SDI embedded (4 pairs) with video per SMPTE 272M for SD and SMPTE 299M for HD. One user selectable group.
User-defined analog and digital level control with sample rate conversion on all inputs

Transport Outputs
ISO13818-1 MPEG 2 Transport Stream (188 byte only)
(x3 mirrored outputs)
MPEG 2 Transport via GIGE (UDP or RTP)
MPEG 2 Transport to local storage Constant Capture to storage (local or NAS)
ASI, IP and Constant Capture operate concurrently

Transport User Data
SMPTE 334 VANC data extraction for IEEE 708/608. Concurrent
User defined VANC Line 7-32 data extraction supported
Teletext: (NABTS) DVS053 Rev 6

Conditional Access
BISS 1/E option

Table Compliance
MPEG Program Specific Information (PSI) Table Compliance:
PAT
PMT
DVB Service Information (SI) Table Compliance (Static)
SDT
NIT
TDT/TOT
SCTE 35 Splice Point injection
ATSC A65B (PSIP) Table compliance (Static)
MGT (TVCT, STT, RRT, EIT)

- For dynamic DVB-SI use Adtec's DTA-3050 and DTVGuide web hosted EIT SI Server.
- For dynamic A65B PSIP use Adtec's DTA-3051 and DTVGuide web service

Pro-02-S Decoder Specifications
Decoder Video Output
- Confidence decode of encode via internal bus, No ASI loop required
- SD/HDSDI SMPTE 259M (SD) and SMPTE 292M (HD) User definable resolution from D1 to 1080i including scaler for Up and Down conversion
- Composite D1 Video (NTSC/PAL) Not concurrent with HD
- HDMI 1.3 No HDCP
- DVB-ASI Input
- Decoder Audio Output (Decodes only one pair)
- SDI Embedded audio stereo audio pair SMPTE 272M (SD) SMPTE 299M (HD) User defined PID
- HDMI
- No analog audio output

Decoder Video Profiles
MPEG 2 SD Profile 1: Adaptive Field Frame (AFF) ISO13818-2 MP@ML
MPEG 2 SD Profile 2: AFF ISO13818-2 422P@ML
MPEG 2 HD Profile 2: ISO13818-2 MP@HL (1920 x 1080 or 1280 x 720)

Decoder Audio Profiles
Dolby Digital AC-3
MPEG 1 Layer 2

Physical
1 RU chassis (19 x 14 x 1.75)
14 pounds

Power
Start-up:72 Watts
Operational: 60 Watts

User Interface Requirements
Supported Browsers
- IE 7 and higher
- Firefox 3.0.0 and higher
- Safari 3.0.0 and higher
- Opera 9.0 and higher

Specifications subject to change without written notice.

Adtec Digital US Sales: 615.256.6619 International Sales 904.394.0389 www.adtecinc.com 02-2011

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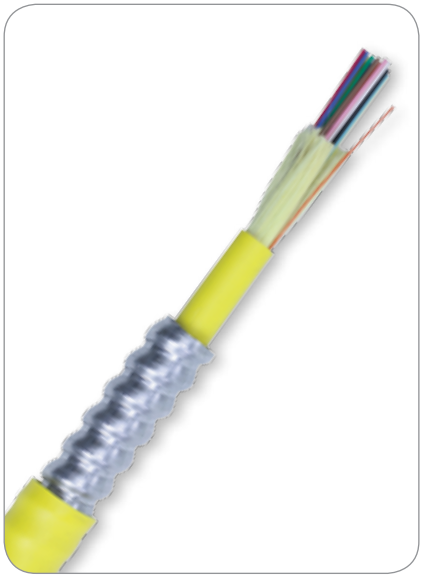


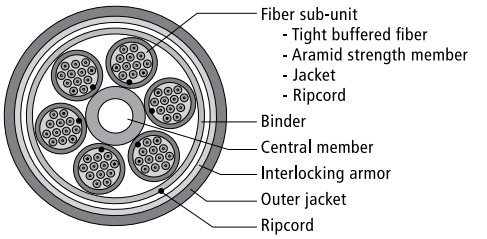
Armored Tight Buffered Circular Premise Cable

Armored Tight Buffered CPC Cables incorporate 4 to 144 fiber count CPC cables in a jacketed, aluminum interlocking armor. Jacketed aluminum interlocking armor provides the best balance of ruggedness, flexibility, and low weight. Flame rated armored cables with no outer jacket and flame rated armored cables with steel interlocking armor are also available. Interlocking armor can also be used with other types of trunk cables, including Indoor/Outdoor Distribution, Breakout and Premise MicroCore®.

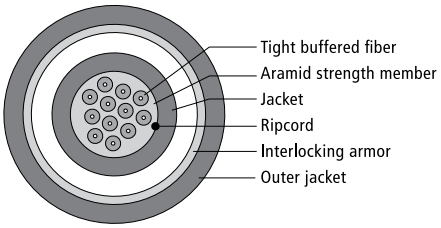
Applications

- Routing inside of buildings where additional ruggedness is required or where increased rodent resistance is required
- Extra protection for fiber optic cables in harsh industrial environments
- Manufacturing plants
- High-density routings in data center application

Cable Components



High Fiber Count Circular Premise Cable



Circular Premise Cable

Specifications

CORE SIZE/ FIBER TYPE	ISO/ IEC	MAXIMUM ATTENUATION (DB/KM)			OVERFILL LAUNCH MIN. BANDWIDTH (MHZ•KM)		EMBc (MHZ•KM)	GIGABIT ETHERNET MIN. LINK DISTANCE (METERS)		10 GIGABIT ETHERNET MIN. LINK DISTANCE (METERS)	
		850 NM	1300 NM	1550 NM	850 NM	1300 NM		850 NM	1300 NM	850 NM	1300 NM
(6) 62.5 Giga-Link™ 300	OM1	3.5	1.2	N/A	200	600	N/A	300	550	32	—
(8) 62.5 Giga-Link™ 1000	OM1	3.5	1.2	N/A	350	600	N/A	500	1000	65	—
(5) 50 Giga-Link™ 600	OM2	3.5	1.5	N/A	500	500	N/A	600	600	82	—
(7) 50 Giga-Link™ 2000	OM2	3.5	1.2	N/A	500	800	N/A	750	2000	110	—
(A) 50 Laser-Link 150	OM2	3.0	1.2	N/A	700	500	950	800	550	150	—
(L) 50 Laser-Link 300	OM3	3.0	1.2	N/A	1500	500	2000	1000	550	300	—
(C) 50 Laser-Link 550	OM4	3.0	1.2	N/A	3500	550	4700	1040	550	550	—
(K) SM Futureguide SR-15e Bend Insensitive	OS2	N/A	0.5	0.5	N/A	N/A	N/A	N/A	5000	N/A	10,000
(9) SM	OS2	N/A	0.5	0.5	N/A	N/A	N/A	N/A	5,000	N/A	10,000
(1) 100/140 Multimode		5.5	3.5	N/A	100	100	N/A	N/A	N/A	N/A	N/A

Tested to meet or exceed EIA/TIA 568-B3 / Telcordia GR-409-CORE

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Specifications are subject to change without notice.

Armored Tight Buffered Circular Premise Cable

Mechanical Data

AFL NO.		FIBER COUNT	NOMINAL DIAMETER	WEIGHT		TENSION				BENDING RADIUS	
				RISER	PLENUM	RISER		PLENUM			
RISER	PLENUM		INCHES (MM)	LBS/1000 FT (KG/KM)	LBS/1000 FT (KG/KM)	INSTALLATION	LONG TERM	INSTALLATION	LONG TERM	INSTALLATION	LONG TERM
						LBS (N)	LBS (N)	LBS (N)	LBS (N)	INCHES (CM)	INCHES (CM)
UR004✶481001-AIAR	UP004*481001-AIAP	4	0.46 (11.8)	79 (117)	89 (132)	150 (660)	45 (198)	100 (440)	30 (132)	7.0 (17.7)	5.0 (12.7)
CR006✶441001-AIAR	CP006*441001-AIAP	6	0.46 (11.8)	74 (109)	82 (122)	150 (660)	45 (198)	100 (440)	30 (132)	7.0 (17.7)	4.8 (12.2)
CR012✶551001-AIAR	CP012*551001-AIAP	12	0.46 (11.8)	79 (117)	89 (132)	150 (660)	45 (198)	100 (440)	30 (132)	7.0 (17.7)	5.0 (12.7)
CR024✶891001-AIAR	CP024*841001-AIAP	24	0.62 (15.7)	129 (193)	144 (215)	300 (1320)	90 (396)	150 (660)	45 (198)	9.3 (23.6)	5.3 (13.4)
CR024✶441001-AIAR	CP024*441001-AIAP	24	0.52 (13.3)	247 (367)	273 (407)	300 (1320)	90 (396)	150 (660)	45 (198)	7.9 (20.0)	5.2 (13.3)
CR036✶551001-AIAR	CP036*551001-AIAP	36	0.94 (24)	256 (395)	294 (439)	300 (1320)	90 (396)	150 (660)	45 (198)	14.2 (36.0)	9.4 (24.0)
CR048✶551001-AIAR	CP048*551001-AIAP	48	0.94 (24)	256 (395)	294 (439)	300 (1320)	90 (396)	150 (660)	45 (198)	14.2 (36.0)	9.4 (24.0)
CR072✶551001-AIAR	CP072*551001-AIAP	72	1.10 (27.9)	355 (530)	401 (597)	300 (1320)	90 (396)	150 (660)	45 (198)	16.5 (41.9)	11.0 (27.9)
CR096✶551001-AIAR	CP096*551001-AIAP	96	1.21 (30.7)	472 (705)	507 (755)	300 (1320)	90 (396)	150 (660)	45 (198)	18.1 (46.1)	12.1 (30.7)
CR144✶551001-AIAR	CP144*551001-AIAP	144	1.32 (33.5)	498 (742)	534 (796)	300 (1320)	90 (396)	150 (660)	45 (198)	19.8 (50.3)	13.2 (33.5)

✶ Please specify fiber type when ordering (see below)

5 = 50/125 µm multimode GIGA-Link™ 600
7 = 50/125 µm multimode GIGA-Link™ 2000
6 = 62.5/125 µm multimode GIGA-Link™ 300
8 = 62.5/125 µm multimode GIGA-Link™ 1000
9 = 9/125 µm single-mode
L = 50/125 µm multimode Laser-Link 300 for 10 Gigabit Ethernet
K = Single-mode Futureguide SR-15e Bend Insensitive

Contact Customer Service for special fiber types/performance needs.

Temperature Specifications

TYPE	TEMPERATURE RANGE	
	OPERATING/ INSTALLATION	STORAGE
Plenum	0°C to +70°C	-40°C to +75°C
Riser	-10°C to +70°	-40°C to +75°

Cable Length - Reel Size

ITEM	REEL F	REEL G
Reel Height (inches)	42	60
Reel Outside Width (inches)	36	36
Drum Diameter (inches)	23	30
Reel Weight (lbs)	148	287
CAPACITY: METERS (FEET)		
4 Fiber w/Interlocking Armor	2,600 (8,530)	5,000 (16,404)
6 Fiber w/Interlocking Armor	2,600 (8,530)	5,000 (16,404)
8 Fiber w/Interlocking Armor	2,600 (8,530)	5,000 (16,404)
12 Fiber w/Interlocking Armor	2,250 (7,382)	4,800 (15,748)
18 Fiber w/Interlocking Armor	1,700 (5,577)	3,600 (11,811)
24 Fiber w/Interlocking Armor	1,500 (4,921)	3,200 (10,500)

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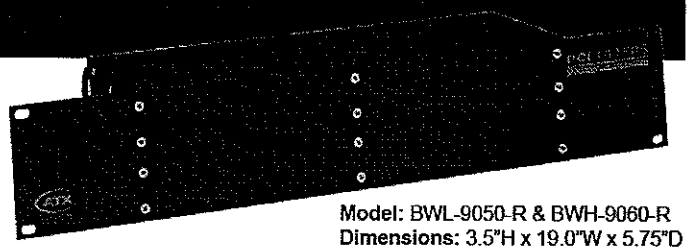
PCI FILTERS®

Brick Wall Low/Highpass Filters:



Model: BWL-9050-R & BWH-9060-R
Dimensions: 3.5"H x 19.0"W x 5.75"D
(8.89H x 48.26W x 14.6D cm)

Application:

Models BWL-9050 and BWH-9060 are extremely sharp cutoff, low and highpass filters designed primarily to uncombine a CATV cable feed to interface to a fiber optics link or for reinserting a block of new programming. Transition from knee to first channel to be rejected is 1.5 MHz. Two brick wall filters can be combined to make an extremely sharp band rejection or bandpass filter.

Features:

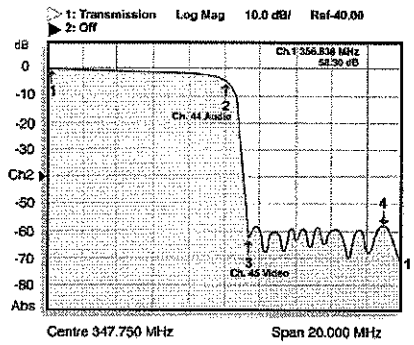
- Temperature stable
- Low frequency vibration stable
- Final production graph available on request
- 3.5" rack mounted version
- "F" type connectors standard
- Customer specified cutoff frequency

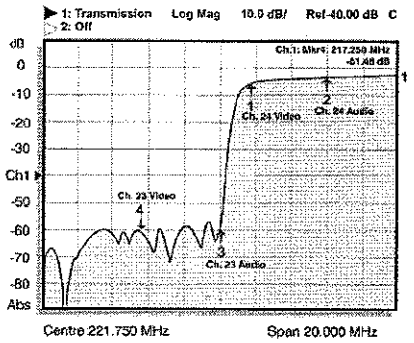
Technical Specifications

SPECIFICATIONS	
PASSBAND	Customer Specified Cutoff Frequency or Channel
STOPBAND	55 dB Minimum
ADJACENT CHANNEL LOSS	4 dB
INSERTION LOSS	2 dB
IMPEDANCE	75 Ohms

Ordering Information

Part Number	Description
Analog	
BWH-9060	Analog Spectrum Brickwall Highpass
BWH-9060-55	Analog Spectrum Brickwall Hyper Band (channel 55 and up)
BWL-9050	Analog Spectrum Brickwall Lowpass
BWL-9050-55	Analog Spectrum Brickwall Hyper Band (channel 55 and up)
BWH-BWL	Analog Spectrum Brickwall Combo Filter (one highpass and one lowpass)
BWH/BWL	Analog Spectrum Brickwall Hyper Band Combo Filter +CH 55 (one highpass and one lowpass)
Digital	
BWH-9060Q	Digital Spectrum Brickwall Highpass
BWH-9060Q-55	Digital Spectrum Brickwall Hyper Band (channel 55 and up)
BWL-9050Q	Digital Spectrum Brickwall Lowpass
BWL-9050Q-55	Digital Spectrum Brickwall Hyper Band (channel 55 and up)
BWH-BWLQ	Digital Spectrum Brickwall Combo Filter (one highpass and one lowpass)
BWH/BWLQ	Digital Spectrum Brickwall Hyper Band Combo Filter +CH 55 (one highpass and one lowpass)





Specifications subject to change without notice.

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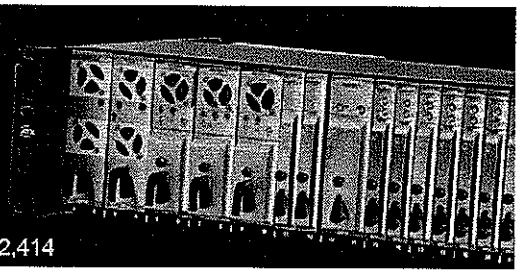
MAXNET® II

Platinum Series

RF & Optical Signal Management

Patented
U.S.# 7,142,414



3RU Active Chassis
(front view)

Active Products

Power Supplies:

- 110, 220 VAC or -48 VDC to 24 VDC module offerings
- 24 VDC redundant powering (AC module - diode steered, DC module - true load share) is easily accommodated by installing two power supplies into an active chassis
- 24V rear terminal block output accommodates remote powering options
- Front LEDs indicate 24V power & power supply status
- Voltage, current, temperature, & fan status parameters are easily monitored over the network (HMS compliant (SNMP v2c)) or through a web browser; e-mail alarm notification is also supported
- Power supply module takes up 2 slots in MAXNET® II active chassis (total of 24 slots)

Power Supply Specifications

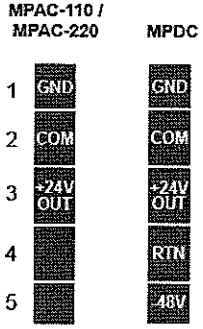
ELECTRICAL SPECIFICATIONS	MPAC-110	MPAC-220	MPDC
INPUT			
INPUT VOLTAGE	110 VAC +/- 10%	220 VAC +/- 10%	-48.0 +/- 12.0 VDC
FREQ	50/60 Hz	50/60 Hz	DC
INPUT CURRENT (Max)	4.0 Amps AC	2.2 Amps AC	5.0 Amps DC (-48 VDC)
POWER FACTOR	> 0.6	> 0.6	NA
EFFICIENCY	> 0.8	> 0.8	> 0.8
OUTPUT			
OUTPUT VOLTAGE	24.0 +/- 1.0 VDC	24.0 +/- 1.0 VDC	24.0 +/- 1.0 VDC
DC OUTPUT CURRENT (Max)	8 Amps	8 Amps	8 Amps
RIPPLE VOLTAGE (Max)	200 mV P-P	200 mV P-P	200 mV P-P
MAXIMUM POWER OUTPUT	250 W	250 W	250 W
OTHER			
APPROVALS	Component: cULus, FCC Entire Module: Approvals Pending (cULus, FCC, CE)	Component: cULus, FCC Entire Module: Approvals Pending (cULus, FCC, CE)	Component: cULus, FCC Entire Module: Approvals Pending (cULus, FCC, CE)
24V POWER INDICATOR	Front: Green LED	Front: Green LED	Front: Green LED
ALARM STATUS	Front: Red Flash LED	Front: Red Flash LED	Front: Red Flash LED
TERMINAL BLOCK WIRING	# 12 AWG	# 12 AWG	# 12 AWG

Rear Terminal Block Assignments

TB#	MPAC-110	MPAC-220	MPDC
1	GND	GND	GND
2	COM (1)	COM (1)	COM (1)
3	+24V OUT (1)	+24V OUT (1)	+24V OUT (1)
4			RTN
5			-48V

1. 24V output on rear panel terminal block allows for remote powering to other MAXNET II active chassis

View at Terminal Block



Ordering Information

Part Number	Description
MPAC-110	110 VAC to 24 VDC 250W Power Supply
MPAC-220	220 VAC to 24 VDC 250W Power Supply
MPDC	-48 VDC to 24 VDC 250W Power Supply

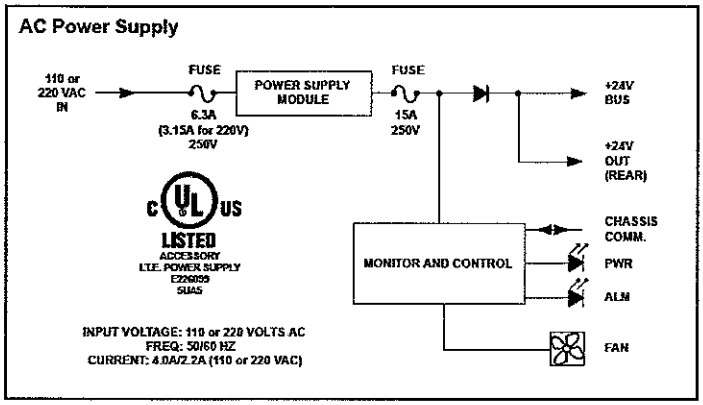
Specifications subject to change without notice.

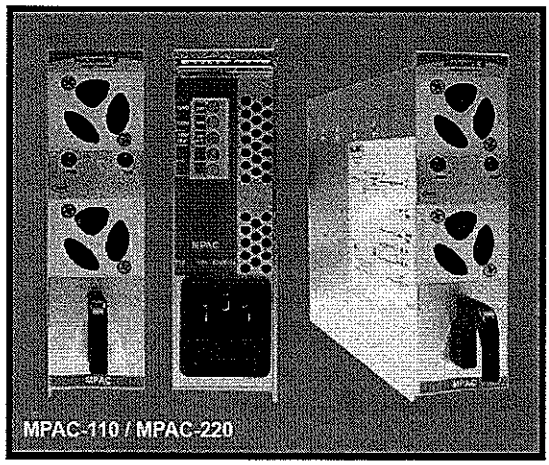
ATX

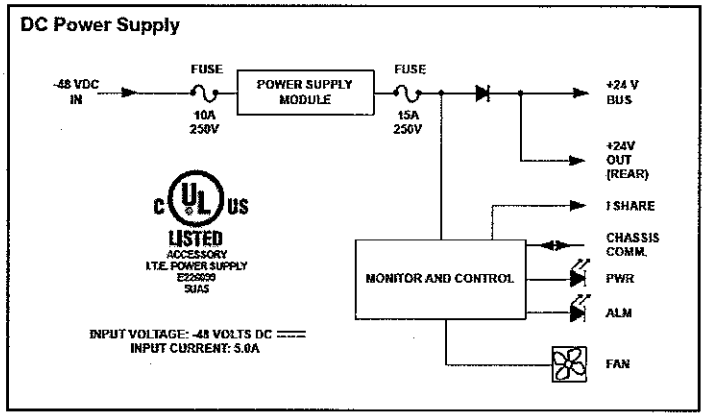
RF & Optical Signal Management

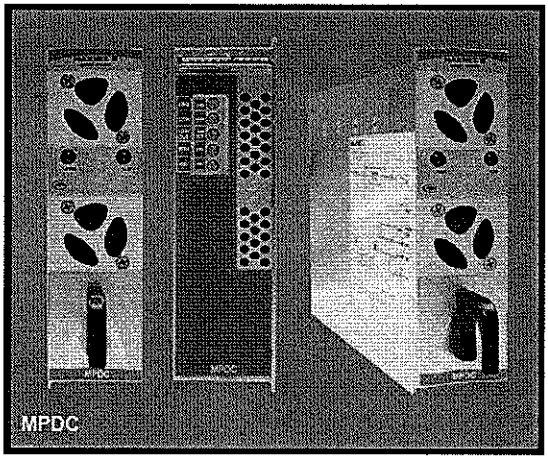
Power Supplies:

Functional Schematics



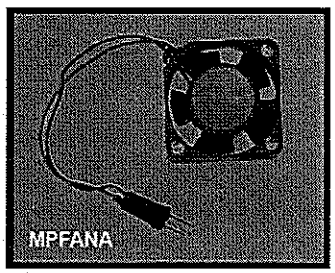






Replacement Fan:

- Front access replacement fan



Ordering Information

Part Number	Description
MPFANA	Replacement Fan for MAXNET II Receivers, Power Supplies & Amplifiers

Specifications subject to change without notice.

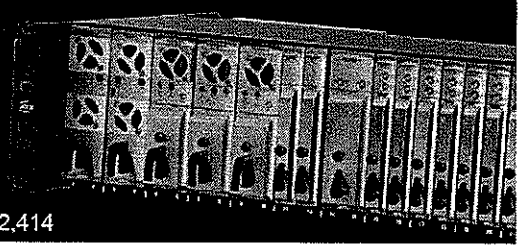
ISO 9001 REGISTERED

MAXNET® II

Platinum Series

RF & Optical Signal Management

Patented
U.S.# 7,142,414



Passive Products

3RU Active Chassis
(front view)

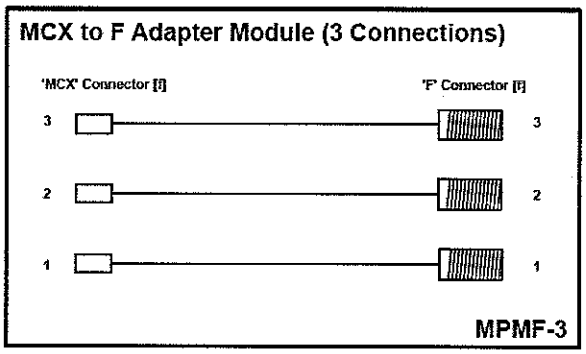
MCX to F Transition Module:

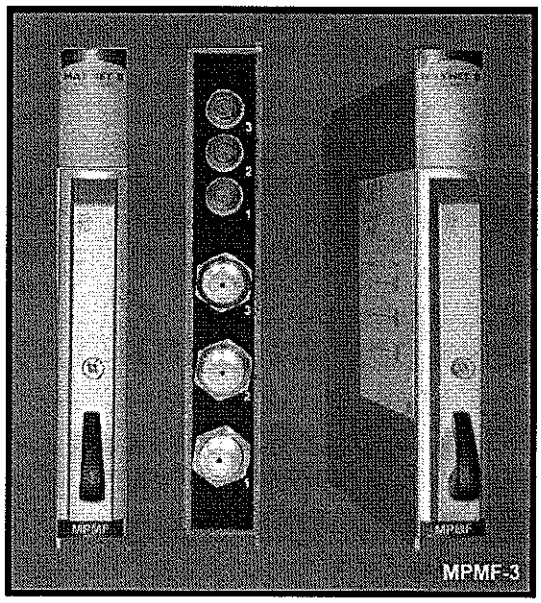
- High performance MCX & F connector

MCX to F Transition Module Specifications

IL < 0.2 dB, 5-1000 MHz
RL > 25 dB, 5-1000 MHz

Functional Schematic





Ordering Information

Part Number	Description
MPMF-3	Triple MCX-F Transition Module

Specifications subject to change without notice.

ISO 9001 REGISTERED

1-501 Clements Road West, Ajax, ON L1S 7H4 Canada
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MAXNET® II

Platinum Series

Pat.# U.S. 7,142,414

MPTX8
Optical Transmitter Manual

Although every effort has been taken to ensure the accuracy of this document it may be necessary, without notice, to make amendments or correct omissions.
Specifications subject to change without notice.

FUNCTIONAL DIAGRAMS / TECHNICAL SPECIFICATIONS

2. Functional Diagrams/ Technical Specifications

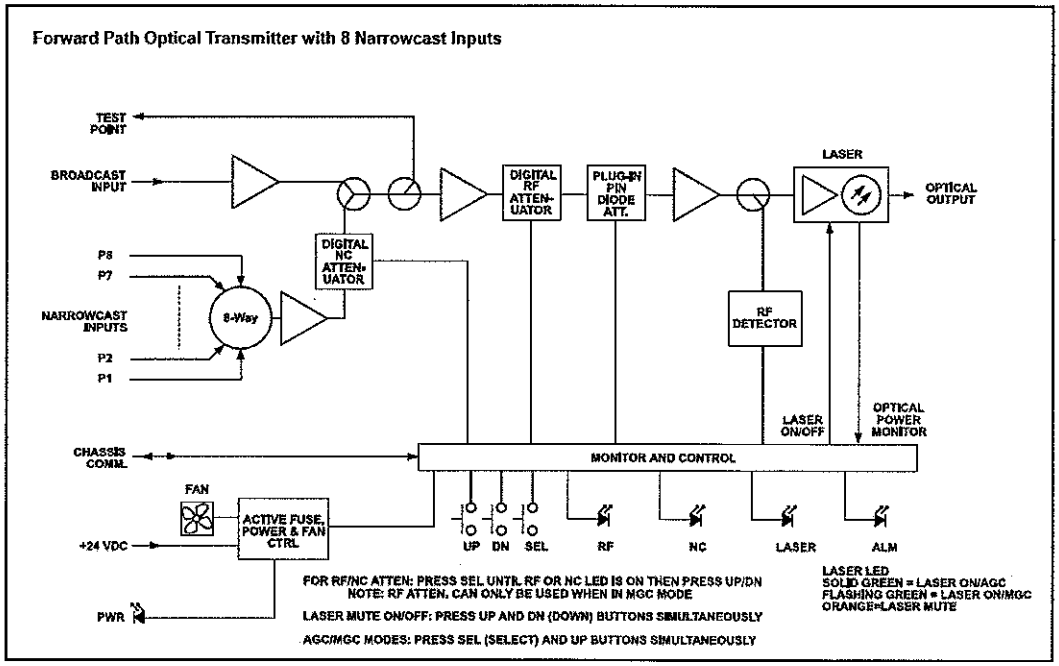


Figure #1: MPTX8: Optical Transmitter with Integrated 8-way Narrowcast Combiner

RF & OPTICAL			
WAVELENGTH		1310 +/- 20 nm	
OUTPUT POWER		3, 6, 8, 9, 10, 11, 12, 13, 14 and 15 dBm / Nominal -0.5 + 1.0 dB	
CONNECTOR TYPE		SC/APC (std.), Others on Special Order	
BANDWIDTH		50 - 1000 MHz	
FLATNESS		50 - 550 MHz	50 - 1000 MHz
	BROADCAST	+/- 0.5 dB	+/- 0.75 dB
	NARROWCAST	+/- 1.0 dB	+/- 1.75 dB
BROADCAST PORT RF INPUT LEVEL		15-21 dBmV	
MIN. NARROWCAST PORT RF INPUT LEVEL(2)		13 dBmV (Digital QAM)	
INPUT RETURN LOSS (Min. 50-1000 MHz)		Broadcast: 16 dB / Narrowcast: 18 dB	
TEST POINT		Front: -20 dB +/- 1.0 dB Relative to Broadcast Input	
ISOLATION (Min. 50-1000 MHz)		Narrowcast - Broadcast: >40 dB / Narrowcast - Narrowcast >30 dB (50-1000 MHz)	
AUTOMATIC GAIN CONTROL (AGC)		**Range:** 6 dB (for Broadcast Input Levels of 15 to 21 dBmV)	
MANUAL GAIN CONTROL (MGC)		**Set and Control:** Front access pushbutton, HMS SNMP v2c, Web Browser, Proprietary Network Interface **Range:** 15.5 dB Digital Attenuator	
MUTE		Front Access Pushbutton, HMS SNMP v2c, Web Browser, Proprietary Network Interface	
CSO(1)		> 64 dBc	
CTB(1)		> 68 dBc	
C/N		See CNR Table pg.3	
OTHER			
TRANSMITTER STATUS INDICATION		Front LEDs, HMS SNMP v2c, Web Browser, Proprietary Network Interface	
CURRENT(3)		300mA	

NOTES:
(1) 80 NTSC modulated analog carriers, 50-550 MHz & 550-1000 MHz QAM at -6 dBc (AGC mode).
(2) Adjust broadcast input levels and/or narrowcast input levels and/or narrowcast attenuator to optimize QAM levels relative to analog carriers.
(3) DC current required from 24V chassis bus.

Table #2: MPTX8 Technical Specifications

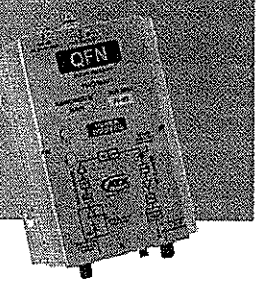
ATX MODEL NUMBER	OUTPUT POWER	LINK LOSS (dB)	LOW CHANNEL LOAD (79 NTSC, No QAM)			HIGH CHANNEL LOAD (79 NTSC, with QAM) [5]		
			ALL FIBER LOSS CNR	FIBER +3 dB PASSIVE LOSS CNR	FIBER +6 dB PASSIVE LOSS CNR	ALL FIBER LOSS CNR	FIBER +3 dB PASSIVE LOSS CNR	FIBER +6 dB PASSIVE LOSS CNR
		1	52.0	N/A	N/A	51.5	N/A	N/A
		2	51.8	N/A	N/A	51.3	N/A	N/A
MPTX8-03	+3 dBm	3	51.5	52.0	N/A	51.0	51.5	N/A
		4	51.1	51.6	N/A	50.6	51.1	N/A
		5	50.6	51.1	N/A	50.1	50.6	N/A
		4	52.0	52.5	N/A	51.5	52.0	N/A
		5	51.8	52.3	N/A	51.3	51.8	N/A
MPTX8-06	+6 dBm	6	51.5	52.0	52.5	51.0	51.5	52.0
		7	51.1	51.6	52.1	50.6	51.1	51.6
		8	50.6	51.1	51.6	50.1	50.6	51.1
		6	51.5	52.0	52.5	51.0	51.5	52.0
		7	51.3	51.8	52.3	50.8	51.3	51.8
MPTX8-08	+8 dBm	8	51.0	51.5	52.0	50.5	51.0	51.5
		9	50.6	51.1	51.6	50.1	50.6	51.1
		10	50.1	50.6	51.1	49.6	50.1	50.6
		7	51.5	52.0	52.5	51.0	51.5	52.0
		8	51.3	51.8	52.3	50.8	51.3	51.8
MPTX8-09	+9 dBm	9	51.0	51.5	52.0	50.5	51.0	51.5
		10	50.6	51.1	51.6	50.1	50.6	51.1
		11	50.1	50.6	51.1	49.6	50.1	50.6
		8	51.5	52.0	52.5	51.0	51.5	52.0
		9	51.3	51.8	52.3	50.8	51.3	51.8
MPTX8-10	+10 dBm	10	51.0	51.5	52.0	50.5	51.0	51.5
		11	50.6	51.1	51.6	50.1	50.6	51.1
		12	50.1	50.6	51.1	49.6	50.1	50.6
		9	51.5	52.0	52.5	51.0	51.5	52.0
		10	51.3	51.8	52.3	50.8	51.3	51.8
MPTX8-11	+11 dBm	11	51.0	51.5	52.0	50.5	51.0	51.5
		12	50.6	51.1	51.6	50.1	50.6	51.1
		13	50.1	50.6	51.1	49.6	50.1	50.6
		10	51.0	51.5	52.0	50.5	51.0	51.5
		11	50.8	51.3	51.8	50.3	50.8	51.3
MPTX8-12	+12 dBm	12	50.5	51.0	51.5	50.0	50.5	51.0
		13	50.1	50.6	51.1	49.6	50.1	50.6
		14	49.6	50.1	50.6	49.1	49.6	50.1
		11	51.0	51.5	52.0	50.5	51.0	51.5
		12	50.8	51.3	51.8	50.3	50.8	51.3
MPTX8-13	+13 dBm	13	50.5	51.0	51.5	50.0	50.5	51.0
		14	50.1	50.6	51.1	49.6	50.1	50.6
		15	49.6	50.1	50.6	49.1	49.6	50.1
		12	51.0	51.5	52.0	50.5	51.0	51.5
		13	50.8	51.3	51.8	50.3	50.8	51.3
MPTX8-14	+14 dBm	14	50.5	51.0	51.5	50.0	50.5	51.0
		15	50.1	50.6	51.1	49.6	50.1	50.6
		16	49.6	50.1	50.6	49.1	49.6	50.1
		13	51.0	51.5	52.0	50.5	51.0	51.5
		14	50.8	51.3	51.8	50.3	50.8	51.3
MPTX8-15	+15 dBm	15	50.5	51.0	51.5	50.0	50.5	51.0
		16	50.1	50.6	51.1	49.6	50.1	50.6
		17	49.6	50.1	50.6	49.1	49.6	50.1

NOTES:

1. "Load" refers to 79 6 MHz NTSC modulated analog channels from 50 to 550 MHz
2. QAM refers to 30 6 MHz wide QAM channels from 550 to 1000 MHz
3. Measured at RF input level range of 15 to 21 dBmV (operating in AGC mode)
4. Rx optical input is (Transmit Power - Link Loss)
5. Minimum equalized MER of 39.5 across the link
   Pre FEC BER of 0 across the link

Table #3: MPTX8 CNR Specifications

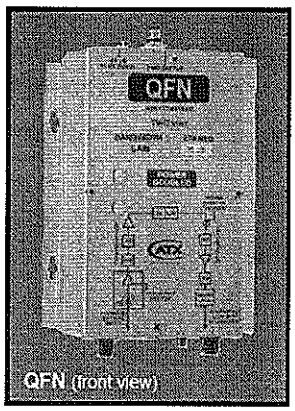
MDU Solutions®



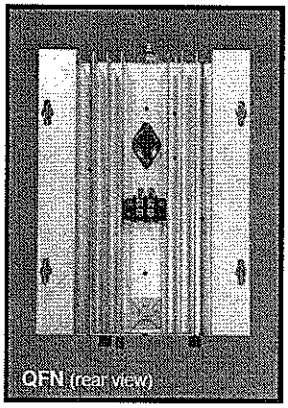
QFN Fiber Node:

Features:

- Power-doubled GaAs technology
- One-way or two-way models
- Return laser also available with optional CWDM wavelengths
- Optional integrated WDM mux can be used in conjunction with the QFRL/DFB15-23 (1550nm 2.5mW laser) in order to facilitate bidirectional communications on a single fiber
- 10 segment LED power meter located under cover
- Universal power options
- 5/8" hardline fitting on select models
- Choice of fixed or variable controls



QFN (front view)


QFN (rear view)

QFN Specifications

SPECIFICATIONS		ONE-WAY	TWO-WAY				RETURN LASERS			
		QFN GP	QFN GP				1310nm DFB	1550nm DFB	1310nm FP	CWDM
BANDWIDTH (MHz)		5 - 870	54 - 870 or 1000				5 to 42	5 to 42	5 to 42	5 to 42
FREQ. RESPONSE		± 0.5 dB	± 0.5 dB				± 0.25 dB	± 0.25 dB	± 0.25 dB	± 0.25 dB
CHANNEL LOADING		77	77				4	4	1	4
GAIN CONT. RANGE		N/A	PAD				PAD	PAD	PAD	PAD
SLOPE CONT. RANGE		N/A	EQ				EQ	EQ	EQ	EQ
GAIN		N/A	N/A				23	23	23	23
OUTPUT LEVELS		48	40	44	49	51	2 mw	2 mw	1 mw	2 mw
DISTORTIONS	COMP. TR. BT. (dB)	74	82	74	69	65	N/A	N/A	N/A	N/A
	COMP. 2nd ORD. (dB)	73	77	73	71	67	> 65[1]	> 65[1]	Typ. 49[1]	> 65[1]
CARRIER TO NOISE (dB)		53	53	53	53	53	N/A	N/A	N/A	N/A
RETURN LOSS (Worst Case)		15 dB	15 dB	15 dB	15 dB	15 dB	15 dB	15 dB	15 dB	15 dB
DC AMPERES @ 24 VDC		0.66	0.66	0.66	0.66	0.66	0.18	0.18	0.18	0.18
POWER DISSIPATION (Watts)[2]		27	27	27	27	27	7	7	7	7

NOTES:
All forward node specifications are based on 1 mW (0dBm) optical power input with 3.7% OMI per channel.
(1) Return laser specification is for discrete 2nd order beats, not composite 2nd order.
(2) Power dissipation is measured at 120 VAC. Multiple gain models show minimum specifications, call for exact data.

Specifications subject to change without notice.
ATX

QFN Fiber Node:

Ordering Information

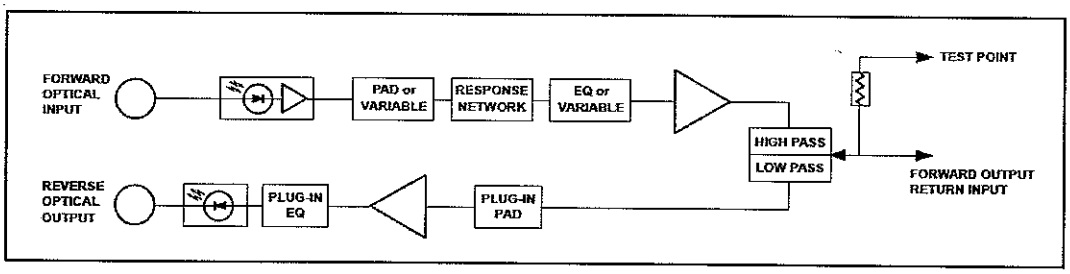
Example Part Number:
QFN 870 A -40 GP 2W
1 2 3 4 5

1. Frequency Range: 870 = 870 MHz
   000 = 1000 MHz
2. Connector Type: A = SC/APC
   F = SC/UPC
3. Output Level (See Specifications Table)
4. Technology: GP = GaAs Power Doubled
5. 2-Way Ready*: 2W *
   1-Way: 1W

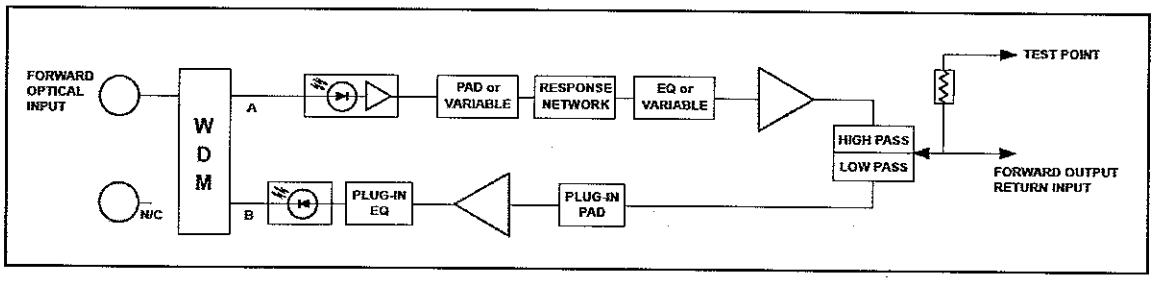
NOTE: * To activate 2-way functionality, order one of the Return Laser options:
QFRL/DFB1-23, QFRL/DFB15-23, QFRL/DFB15-23W, QFRL/FP1-23 or QFRL/xxxx-23.

Part Number	Description
Options	
QFRL/DFB1-23	1310nm 2mW DFB Return Laser
QFRL/DFB15-23	1550nm 2.5mW DFB Return Laser
QFRL/DFB15-23W	1550nm 2.5mW DFB Return Laser; WDM Module Integrated into Unit
QFRL/FP1-23	1310nm, 1mW Fabry-Perot Return Laser
QFRL/xxxx-23	CWDM, 2mW, DFB. xxxx = 1470, 1490, 1510, 1530, 1570, 1590, 1610
QPML870-**	Interstage EQ Value, Factory Selected for Slope. ** = dB value (1.5, 3.0, 4.0, 4.5, 5.0, 6.0, 7.0, 7.5, 9.0, 10.5, 12.0, 13.5, 15.0, 16.5, 18.0)
QPML1000-**	Interstage EQ Value, Factory Selected for Slope. ** = dB value (1.5, 3.0, 4.0, 5.0, 6.0, 7.0, 8.0, 9.0, 10.0, 11.0, 12.0, 13.5, 15.0, 16.5, 18.0)
QES42-**	Reverse EQ Value. ** = dB value (0-12 dB in 1 dB increments)
SXP-TY-**	Plug-in Attenuator Pads. ** = dB value (0-20 dB in 1 dB increments)
DTS240250UC-P5-ET	External Universal AC Power Supply, 100-240 VAC, 47-63 Hz Input, 24 VDC Output
#951	120 to 26 VAC Transformer, 50 VA
Shipping Weight	7.5 lbs (3.4 kg)
Dimensions	9.125H" x 7.0"W x 3.562"D (23.18H x 17.78W x 9.05D cm)

QFN Functional Schematic



QFN with Integrated WDM Functional Schematic



Specifications subject to change without notice.

ISO 9001 REGISTERED

MAXNET® II

Platinum Series

Pat.# U.S. 7,142,414

QMP200
Return RF/IF Amplifier Manual

Although every effort has been taken to ensure the accuracy of this document it may be necessary, without notice, to make amendments or correct omissions.
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1.1. Functional Diagram

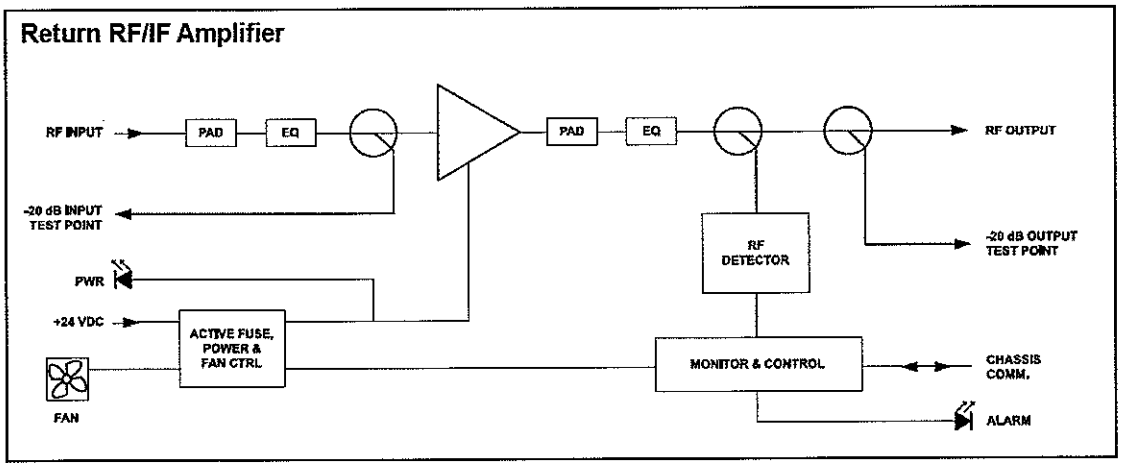

Figure #1: Return RF/IF Amplifier Functional Diagram

1.2. Technical Specifications

PART NUMBER (3)	GAIN		GAIN AND SLOPE CONTROL (1)	TEST POINTS (4)	RETURN LOSS	DISTORTION PERFORMANCE					NOISE FIGURE	OPERATING CURRENT (2)
	BW (MHz)	GAIN (dB)	PLUG-IN	I/O (dB)	I/O (dB)	OUTPUT LEVEL (dBmV)	CH. LOAD (#)	CH. SLOPE (dB)	CTB (-dB)	CSO (-dB)	(dB)	(mA)
QMP200-28L	5-200	28 +/- 1.0	INPUT / OUTPUT	20 +/- 1.0	18	50	10	0	74	65	7	140
QMP200-20L	5-200	20 +/- 1.0	INPUT / OUTPUT	20 +/- 1.0	18	50	10	0	75	65	7	140
QMP200-28LF	5-200	28 +/- 1.0	INPUT / OUTPUT	20 +/- 1.0	18	50	10	0	74	65	7	140
QMP200-20LF	5-200	20 +/- 1.0	INPUT / OUTPUT	20 +/- 1.0	18	50	10	0	75	65	7	140

NOTES:
1. See functional schematics.
2. DC load current at + 24 VDC.
3. L = MCX connectors; LF = F connectors.
4. At input test point specified with 0 dB plug-in attenuator and 0 dB plug-in EQ.

Table #2: Technical Specifications

MAXNET® II

Platinum Series

RF & Optical Signal Management

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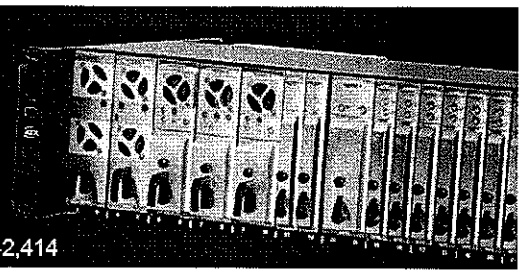


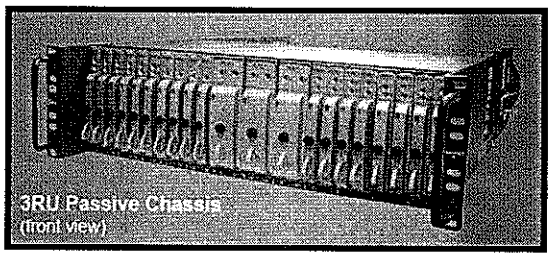
Chassis & Cable Management Options

3RU Active Chassis
(front view)

Chassis:

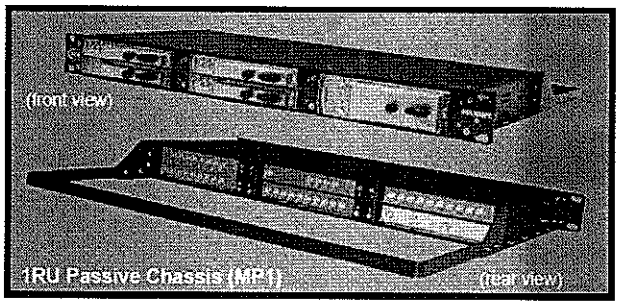
Passive Version:

- Rugged 3RU design
- Can accommodate up to 24 single-width passive modules (2, 4, 8, dual 4-way, triple 2-way splitter/combiners and/or DCs & triple DCs) or 12 dual-width modules (16-way splitter/combiners)
- Variety of cable management options (see illustrations)
- Modules push and lock into chassis; no mounting hardware necessary
- Easily upgradeable to active chassis



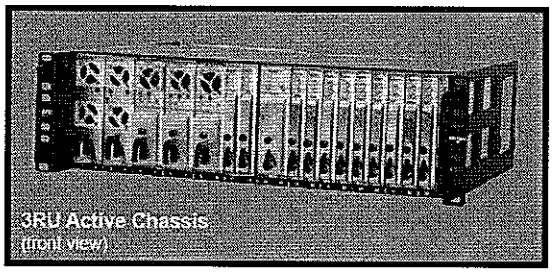
Passive Version:

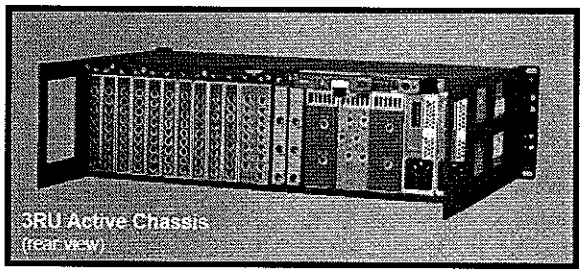
- Rugged 1RU design
- Can accommodate up to 6 single-width passive modules (2, 4, 8, dual 4-way, triple 2-way splitter/combiners and/or DCs & triple DCs) or 3 dual-width modules (16-way splitter/combiners)
- Includes cable management bar (see illustration)
- Modules push and lock into chassis; no mounting hardware necessary



Active Version:

- Rugged 3RU design
- Can accommodate both active & passive module types up to 24 single-width passive modules (2, 4, 8, dual 4-way, triple 2-way splitter/combiners and/or DCs & triple DCs) or 12 dual-width modules (16-way splitter/combiners, amplifiers, power supplies, optical receivers, optical transmitters, RF detector A/B switch)
- Now with MP3FA series chassis for F connector optics modules (can also hold standard MCX actives & passives)
- Variety of cable & fiber management options (see illustrations)
- Modules push & lock into chassis; no mounting hardware necessary
- Chassis can be powered from 110 VAC, 220 VAC or -48 VDC plug-in power supply modules or remotely via the rear access 24 VDC A & B (redundant) terminal block
- Active chassis is provisioned to accommodate setup, monitoring & control for modules & chassis over the network (HMS compliant (SNMP v2c)) or through a web browser; e-mail alarm notification is also supported
- Rear mount N/O relay contact provided as an alternative alarming scheme





3RU Chassis Dimensions:

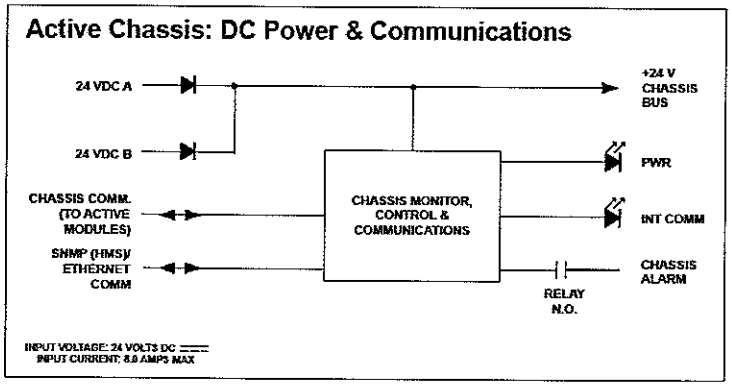
5.25"H x 19.0"W x 14.75"D (13.34H x 48.26W x 37.47D cm)
(without cable management)

Specifications subject to change without notice.

Chassis:

Active Version (cont'd):

Functional Schematic



Active Chassis Specifications

ELECTRICAL SPECIFICATIONS	
DC INPUT	
INPUT VOLTAGE	24 VDC
INPUT CURRENT (Max)	8 Amps DC
OTHER	
24V POWER INDICATOR	Green LED
COMMUNICATION STATUS	Yellow LED
TERMINAL BLOCK WIRING	# 12 AWG
COMMUNICATIONS INTERFACE	10/100 Base-T Web / SNMP (HMS)

NOTE:
Powering can be provided via A/B input on rear terminal block or by plug-in MPAC/MPDC power supplies.

Terminal Block Assignment

TB#	
1	+24V A
2	COM
3	+24V B
4	RLY COM
5	RLY NO

View at Terminal Block

RLY NO	RLY COM	+24V B	COM	+24V A
5	4	3	2	1

Specifications subject to change without notice.

Cable & Fiber Management Options:

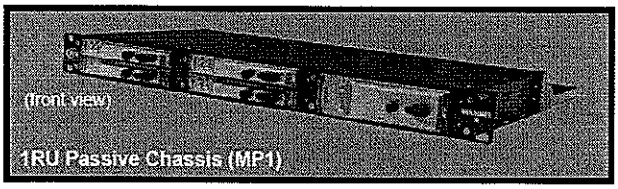
Passive Chassis Offerings:

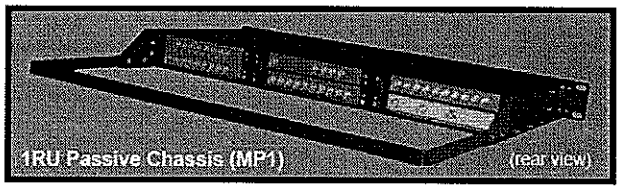
- MP1 – passive chassis with cable management bar
- MP3B – passive chassis with dual cable management bar
- MP3H – passive chassis with user configurable horizontal channel cable management system
- MP3V – passive chassis with user configurable vertical channel cable management system
- MP3T – passive chassis with large cable management tray
- MP3R – passive reverse chassis

NOTE: individual cable management components (eg. cable bars) are also available

MP1 - Passive Chassis with Cable Management Bar

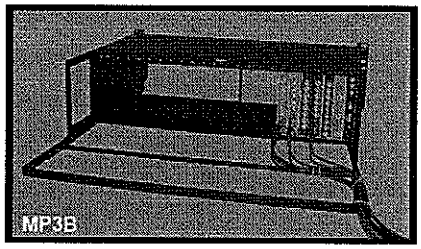
One cable management bar extends out rear of chassis for cable routing.

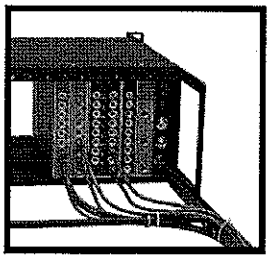




MP3B - Passive Chassis with Dual Cable Management Bar

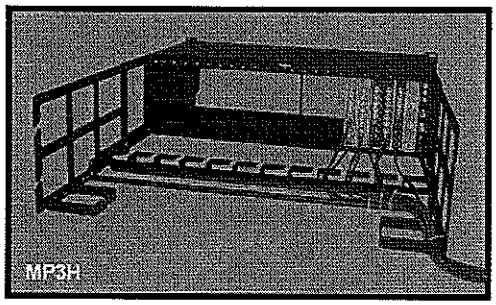
One large cable management bar extends out rear of chassis for cable routing. A second adjustable bar fits inside larger bar for further routing control.

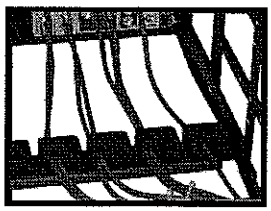




MP3H - Passive Chassis with User Configurable Horizontal Channel Cable Management System

Cables are routed through horizontal channels attached to extension brackets out rear of chassis. These channels, as well as cable bars & guide squares, are configured by users to suit their individual cable management needs.





Specifications subject to change without notice.

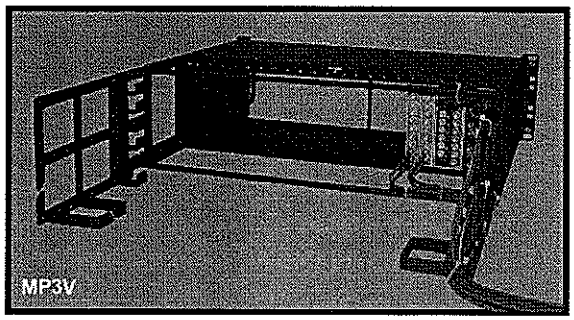
RF & Optical Signal Management

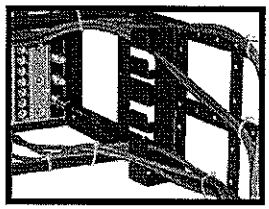
Cable & Fiber Management Options:

Passive Chassis Offerings (cont'd):

MP3V - Passive Chassis with User Configurable Vertical Channel Cable Management System

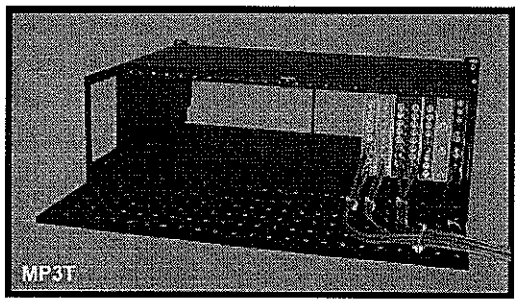
Cables are routed through vertical channels attached to extension brackets out rear of chassis. These channels, as well as cable bars & guide squares, are configured by users to suit their individual cable management needs.





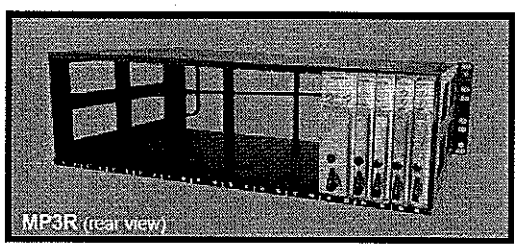
MP3T - Passive Chassis with Large Cable Management Tray

Cables are fastened to cable management tray using clips (included) and tie wraps. This tray can also be used for fiber management with the supplied fiber guide clips.



MP3R - Passive Reverse Chassis

Modules are mounted in reverse position.



Specifications subject to change without notice.

Cable & Fiber Management Options:

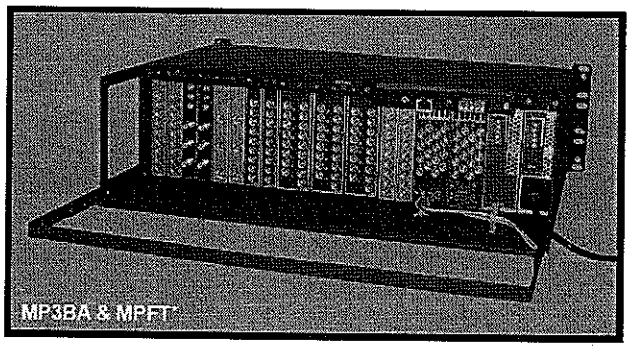
Active Chassis Offerings:

- MP3BA – active chassis with dual cable management bar
- MP3HA – active chassis with user configurable horizontal channel cable management system
- MP3VA – active chassis with user configurable vertical channel cable management system
- MP3TA – active chassis with large cable management tray
- MPFT – Fiber management tray which can be configured in two positions
- MP3FA – active chassis for F connector optics platform (includes rear rails for patch panels & front fiber tray)

NOTE: individual cable management components (eg. cable bars) are also available

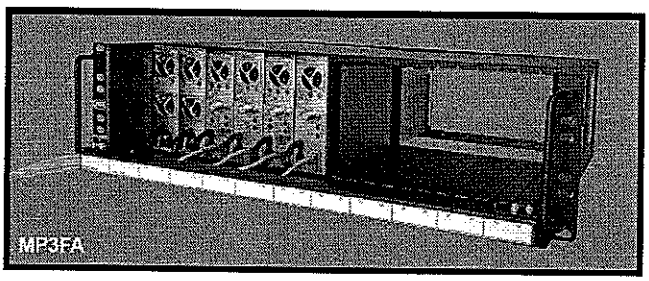
MP3BA - Active Chassis with Dual Cable Management Bar

One large cable management bar extends out rear of chassis for cable routing. A second adjustable bar fits inside larger bar for further routing control.



MP3FA - Active Chassis for F Connector Optics Platform

One cable management fiber tray extends out front of chassis for cable routing. Two rails extend out rear of chassis to accommodate patch panels for F connector optics modules.



Alternate cable management versions available are (currently not shown):

MP3HA – active chassis with user configurable horizontal channel cable management system (see MP3H)

MP3VA – active chassis with user configurable vertical channel cable management system (see MP3V)

MP3TA – active chassis with large cable management tray (see MP3T)

* Also pictured with the MP3BA is the MPFT Fiber Tray (sold separately)

RF & Optical Signal Management

Cable & Fiber Management Options:

Ordering Information

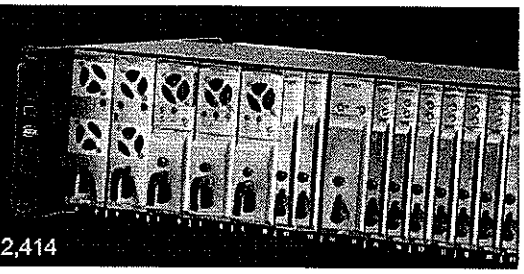
Part Number	Description
MP1	1RU Passive Chassis with Cable Management Bar
MP3B	3RU Passive Chassis with Dual Cable Management Cable Bars
MP3H	3RU Passive Chassis with Configurable Horizontal Channel Cable Mgmt
MP3V	3RU Passive Chassis with Configurable Vertical Channel Cable Mgmt
MP3T	3RU Passive Chassis with Large Cable Management Tray
MP3R	3RU Passive Reverse Chassis
MP3BA	3RU Active Chassis with Dual Cable Management Cable Bars
MP3HA	3RU Active Chassis with Configurable Horizontal Channel Cable Mgmt
MP3VA	3RU Active Chassis with Configurable Vertical Channel Cable Mgmt
MP3TA	3RU Active Chassis with Large Cable Management Tray
MPFT	Fiber Management Tray (incl. 12 push fit plastic fiber guides) for 3RU Chassis
MP3FA	3RU Active Chassis for F Connector Optics Platform (incl. rear rails for patch panels & front fiber tray)
MP3FA-COM	Replacement Communication Module for MP3FA
MP3FA-T	Replacement Fiber Management Tray for MP3FA

MAXNET® II

Platinum Series

RF & Optical Signal Management

Patented
U.S.# 7,142,414



3RU Active Chassis
(front view)

Passive Products

Splitting / Combining Modules:

- 16-way, 8-way, 4-way, dual 4-way, 2-way, & triple 2-way universal splitting/combining modules
- Ultra-dense form factor - incredible space savings (24 8-ways in 3RU chassis)
- Front access -20 dB dual test points (split/combine)
- Front access to plug-in locations for pads & EQs
- High performance MCX connector receptacles
- 5-1000 MHz operation
- Optimized RF performance
- 16-way takes up 2 slots and all other module types take up 1 slot in MAXNET® II chassis (total of 24 slots)

Splitter / Combiner Specifications

SPECIFICATIONS		MP16[3]	MP8[3]	MP4 / MP4.2xx[1]	MP2 / MP2-3[1]
MEASUREMENT	FREQUENCY	OA (dB)	OA (dB)	OA (dB)	OA (dB)
INSERTION LOSS and FLATNESS	5-10 MHz	17.2 +/- 0.5	13.0 +/- 0.5	7.1/7.1 +/- 0.5	3.9/3.3 +/- 0.5
	10-50 MHz	17.2 +/- 0.5	13.0 +/- 0.5	7.1/7.1 +/- 0.5	3.9/3.4 +/- 0.5
	50-200 MHz	17.2 +/- 0.5	13.0 +/- 0.5	7.5/7.4 +/- 0.5	4.2/3.6 +/- 0.5
	200-550 MHz	17.2 +/- 0.7	13.0 +/- 0.6	7.9/7.8 +/- 0.5	4.5/3.8 +/- 0.5
	550-750 MHz	17.2 +/- 1.0	13.0 +/- 0.8	8.2/8.2 +/- 0.5	4.7/4.0 +/- 0.5
	750-860 MHz	17.2 +/- 1.2	13.0 +/- 0.9	8.6/8.4 +/- 0.6	4.9/4.2 +/- 0.6
	860-1000 MHz	17.2 +/- 1.5	13.3 +/- 1.0	9.0/8.8 +/- 0.7	5.3/4.4 +/- 0.7
TEST PORT LOSS and FLATNESS[2][4]	5-10 MHz	20.0 +/- 0.7	20.0 +/- 0.7	20.0 +/- 0.7	20.0 +/- 0.7
	10-50 MHz	20.0 +/- 0.5	20.0 +/- 0.5	20.0 +/- 0.5	20.0 +/- 0.5
	50-200 MHz	20.0 +/- 0.5	20.0 +/- 0.5	20.0 +/- 0.5	20.0 +/- 0.5
	200-550 MHz	20.0 +/- 0.5	20.0 +/- 0.5	20.0 +/- 0.5	20.0 +/- 0.5
	550-750 MHz	20.0 +/- 0.6	20.0 +/- 0.6	20.0 +/- 0.6	20.0 +/- 0.6
	750-860 MHz	20.0 +/- 0.8	20.0 +/- 0.8	20.0 +/- 0.8	20.0 +/- 0.8
	860-1000 MHz	20.0 +/- 1.0	20.0 +/- 1.0	20.0 +/- 1.0	20.0 +/- 1.0
ISOLATION (Min) PORT to PORT	5-10 MHz	30	30	30	30
	10-50 MHz	30	30	30	30
	50-200 MHz	30	30	30	30
	200-550 MHz	30	30	30	30
	550-750 MHz	30	30	30	30
	750-860 MHz	30	30	30	30
	860-1000 MHz	30	30	30	30
COMMON PORT RETURN LOSS (Min)	5-10 MHz	20	20	20	20
	10-50 MHz	20	20	20	20
	50-200 MHz	20	20	20	20
	200-550 MHz	20	20	20	20
	550-750 MHz	20	20	20	20
	750-860 MHz	20	20	20	20
	860-1000 MHz	20	20	20	20
PORT RETURN LOSS (Min)	5-10 MHz	20	20	20	20
	10-50 MHz	20	20	20	20
	50-200 MHz	20	20	20	20
	200-550 MHz	20	20	20	20
	550-750 MHz	20	20	20	20
	750-860 MHz	20	20	20	20
	860-1000 MHz	20	20	20	20
RFI (Min)	5-1000 MHz	100	100	100	100

NOTES:

(1) Device to device isolation > 75 dB

(2) Measured relative to common port (and with inserted PAD/EQ = 0 dB in common port)

(3) Unit uses internal equalizer for flattening loss

(4) Doesn't apply to MP2-3

SPECIFICATIONS		MP6-12DC
MEASUREMENT	FREQUENCY	OA (dB)
INSERTION LOSS (IN-OUT)	5-10 MHz	3.1 +/- 0.3
	10-50 MHz	3.0 +/- 0.3
	50-200 MHz	3.0 +/- 0.3
	200-400 MHz	3.4 +/- 0.3
	400-550 MHz	3.7 +/- 0.4
	550-750 MHz	4.2 +/- 0.4
	750-860 MHz	4.7 +/- 0.4
	860-1000 MHz	5.2 +/- 0.5
INSERTION LOSS (PORT-OUT)	5-10 MHz	15.4 +/- 1.0
	10-50 MHz	15.4 +/- 1.0
	50-200 MHz	15.5 +/- 1.0
	200-550 MHz	15.6 +/- 1.0
	550-750 MHz	16.0 +/- 1.0
	750-860 MHz	16.3 +/- 1.0
	860-1000 MHz	16.6 +/- 1.0
ISOLATION (Min) (PORT to PORT)	5-10 MHz	34
	10-50 MHz	34
	50-200 MHz	34
	200-550 MHz	34
	550-750 MHz	34
	750-860 MHz	34
	860-1000 MHz	34
ISOLATION (Min) (IN-PORT)	5-10 MHz	28
	10-50 MHz	28
	50-200 MHz	28
	200-550 MHz	28
	550-750 MHz	28
	750-860 MHz	28
	860-1000 MHz	28
RETURN LOSS (Min) (PORTS IN & OUT)	5-10 MHz	16
	10-50 MHz	18
	50-200 MHz	18
	200-550 MHz	18
	550-750 MHz	18
	750-860 MHz	18
	860-1000 MHz	18
RFI (Min)	5-1000 MHz	100

Specifications subject to change without notice.

RF & Optical Signal Management

Splitting/Combining Modules:

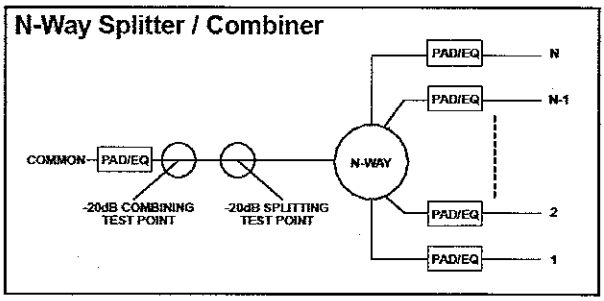
Splitter / Combiner Specifications (cont'd)

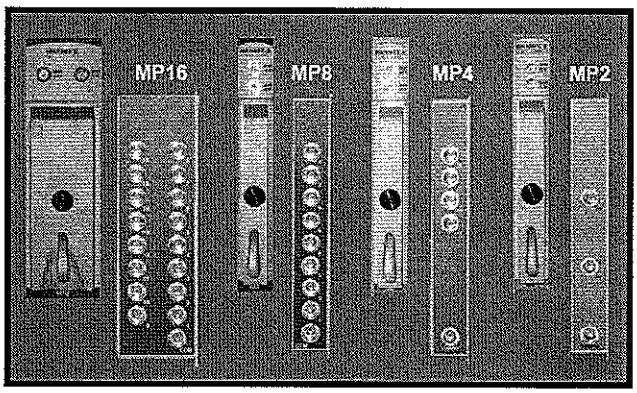
SPECIFICATIONS		MPSC6
MEASUREMENT	FREQUENCY	OA (dB)
INSERTION LOSS and FLATNESS	5-10 MHz	8.5 +/- 0.5
	10-50 MHz	8.5 +/- 0.5
	50-200 MHz	8.5 +/- 0.5
	200-550 MHz	9 +/- 0.6
	550-750 MHz	9.5 +/- 0.8
	750-860 MHz	9.5 +/- 0.9
	860-1002 MHz	9.5 +/- 1.0
ISOLATION (Min) PORT to PORT	5-10 MHz	30
	10-50 MHz	30
	50-200 MHz	30
	200-550 MHz	30
	550-750 MHz	30
	750-860 MHz	30
	860-1002 MHz	30
COMMON PORT RETURN LOSS (Min)	5-10 MHz	18
	10-50 MHz	20
	50-200 MHz	20
	200-550 MHz	20
	550-750 MHz	20
	750-860 MHz	20
	860-1002 MHz	20
PORT RETURN LOSS (Min)	5-10 MHz	20
	10-50 MHz	20
	50-200 MHz	20
	200-550 MHz	20
	550-750 MHz	20
	750-860 MHz	20
	860-1002 MHz	20
RFI (Min)	5-1002 MHz	100

Ordering Information

Part Number	Description
MP16	16-Way Splitter / Combiner
MP8	8-Way Splitter / Combiner
MP6-12DC	6 x 12 dB Cascaded Directional Coupler Combiner
MPSC6	Low Loss 6-Way Splitter / Combiner
MP4	4-Way Splitter / Combiner
MP4-2SC	Dual 4-Way Splitter / Combiner
MP4-2S	Dual 4-Way Splitter
MP4-2C	Dual 4-Way Combiner
MP2	2-Way Splitter / Combiner
MP2-3	Triple 2-Way Splitter / Combiner

Functional Schematics



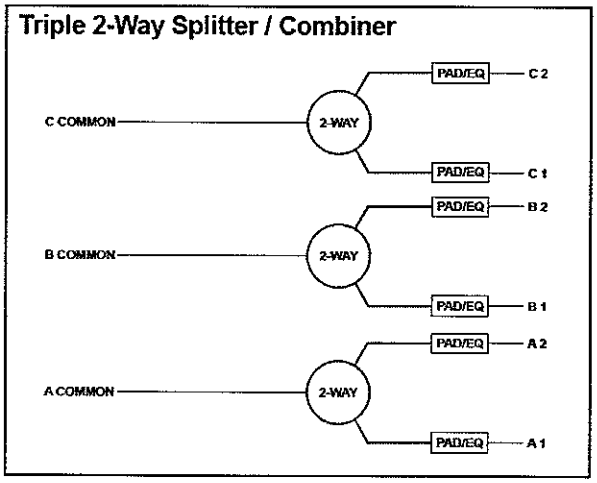


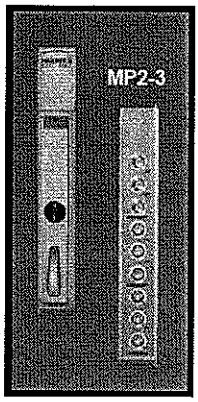
Specifications subject to change without notice.

Splitting/Combining Modules:

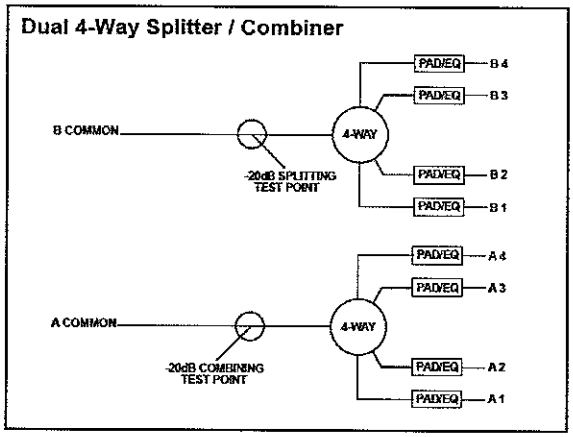
Functional Schematics (cont'd)

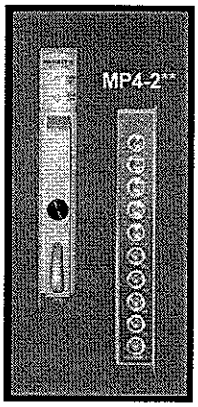
Triple 2-Way Splitter / Combiner



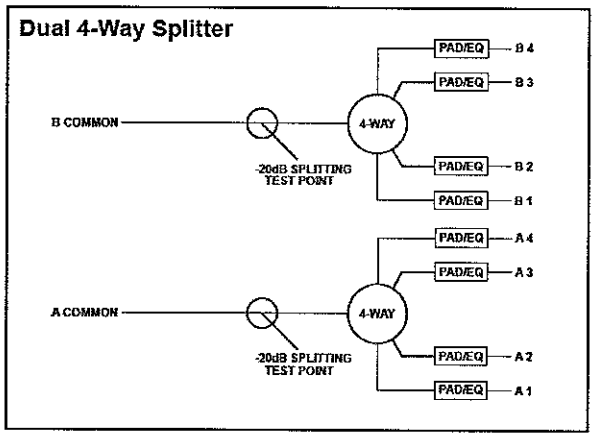


Dual 4-Way Splitter / Combiner

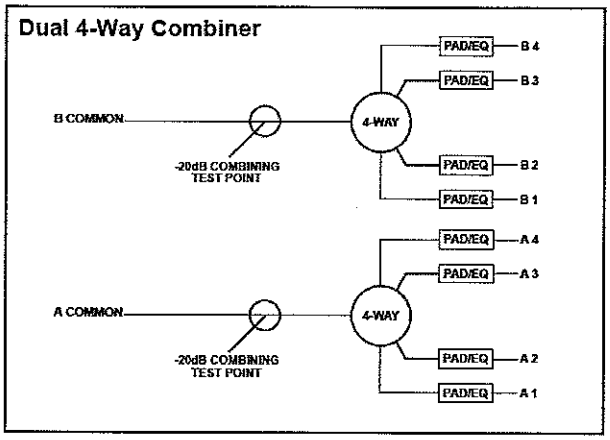




Dual 4-Way Splitter



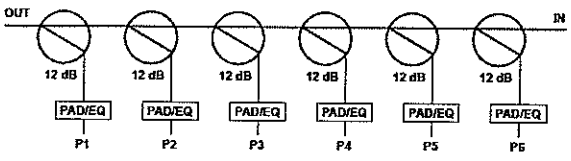
Dual 4-Way Combiner

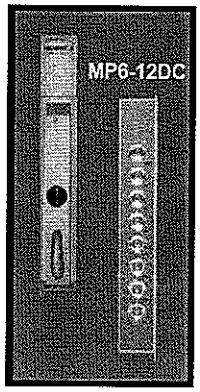


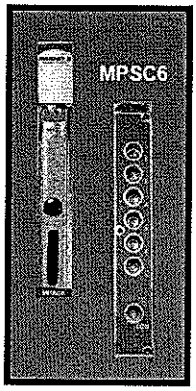
Specifications subject to change without notice.

Functional Schematics (cont'd)

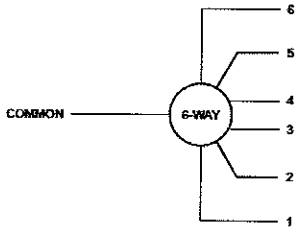
Cascaded Directional Coupler Combiner







Low Loss 6-Way Splitter / Combiner



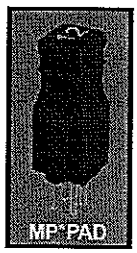
Plug-in Pads/EQs:

- Pads & EQs can be easily inserted or removed with fingertips or by using the pad tool (pad tool part # MPPT - see MAXNET® II Accessories spec sheet)
- Plug-in pads are available from 0-20 dB in 1 dB increments, 16-20 dB recommended for return band only

Plug-in Pad/EQ Specifications

dB VALUES	FREQ. RANGE	IMPEDANCE	RETURN LOSS	TILT	FLATNESS
0 dB	5 - 1000 MHz	75 ohm	≥ 20 dB	N/A	N/A
1-20 dB	5 - 1000 MHz	75 ohm	≥ 20 dB	≤ 0.5 dB	+/- 0.2 dB

EQ VALUES	SLOPE 1000/45 MHz	INSERTION LOSS	EQUALIZER TOLERANCE	RETURN LOSS	IMPEDANCE
1.5 dB	1.4 dB	≤ 1 dB	+/- 0.5 dB	≥ 18 dB	75 ohm
3 dB	3.2 dB				
4.5 dB	3.8 dB				
6 dB	5.1 dB				
7.5 dB	6.2 dB				
9 dB	7.1 dB				
10.5 dB	8.7 dB				



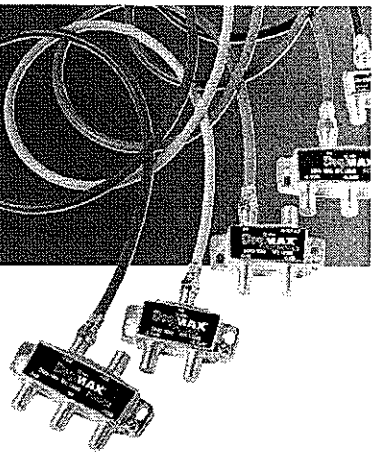
* = PAD Value

* = EQ Value

Ordering Information

Part Number	Description
MP*PAD	Plug-in Pad (* = dB value, 0 to 20 dB) (must order in quantities of 10)
MP*EQ	Plug-in Equalizer, 1000 MHz (* = dB value, 1.5 to 10.5 dB) (must order in quantities of 10)

DigiMAX
Drop Passives

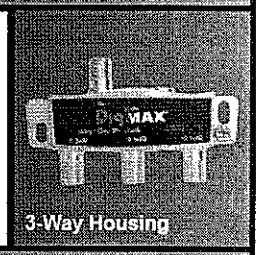


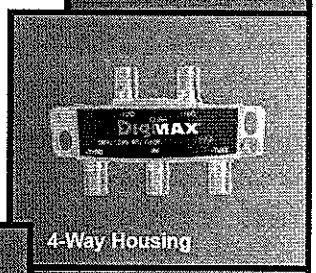
Digital-Ready, Low Intermodulation Splitters, Directional Couplers, and Specialty Passives Overview

Drop Passives:

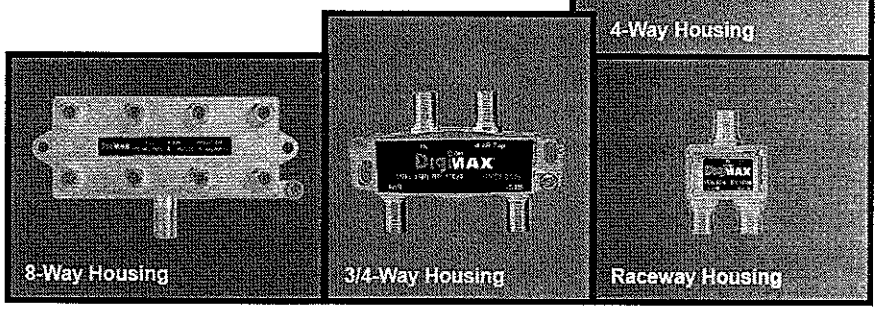
Features & Benefits:

- Digital Ready
- 5 MHz to 1 GHz bandwidth
- SCTE compliant
- Low intermodulation circuitry to ensure low distortion during interactive operation
- Precision tuned for optimum specifications
- Surge Protection: CAT A3 6kV, 200A Ring wave version available
- Premium ferrites, resistors & capacitors
- PCB microstrip designed for consistent performance
- Multiple grounding of PCB ensures quality RF performance
- Stand-offs to increase air flow under the unit
- CE Approved





(all products not pictured here)



Specifications subject to change without notice.

Splitters:

CAT A3 6kV, 200A Ring Wave Protected Splitter Specifications

SPECIFICATIONS		DM2R	DM2	DM3	DM3U	DM4	DM8V
MEASUREMENT	FREQUENCY	QA (dB)	QA (dB)	QA (dB)	QA (dB)	QA (dB)	QA (dB)
IL and FLATNESS	5-15 MHz	4.0	3.5	5.5	3.5/7.0	7.0	10.5
	15-40 MHz	3.5	3.5	5.5	3.5/7.0	7.0	10.5
	40-200 MHz	3.6	3.5	5.5	3.5/7.2	7.0	10.5
	200-450 MHz	3.6	3.5	5.5	3.5/7.2	7.0	10.5
	450-750 MHz	3.8	3.5	5.5	3.5/7.2	7.0	10.5
	750-1002 MHz	3.9	3.7	5.9	3.7/7.9	7.5	11.5
ISOLATION (Min)	5-15 MHz	25	25	24	24	24	24
	15-40 MHz	32	35	35	35	35	35
	50-200 MHz	30	30	28	30	28	28
	200-450 MHz	25	25	22	25	25	25
	450-750 MHz	22	25	22	25	25	22
	750-1002 MHz	22	22	22	22	22	22
INPUT RETURN LOSS (Min)	5-15 MHz	18	22	22	22	20	22
	15-40 MHz	25	25	25	25	25	25
	40-200 MHz	22	22	22	23	20	22
	200-450 MHz	22	20	22	20	20	20
	450-750 MHz	20	20	20	20	20	20
	750-1002 MHz	20	20	20	20	20	20
OUTPUT RETURN LOSS (Min)	5-15 MHz	20	22	20	20	20	20
	15-40 MHz	25	35	30	30	30	30
	40-200 MHz	22	25	22	24	24	24
	200-450 MHz	22	22	20	20	20	20
	450-750 MHz	20	20	20	20	20	20
	750-1002 MHz	20	20	20	20	20	20
RFI (Min)	5-1002 MHz	120 dB					
TEMPERATURE RANGE		-40°C to +70°C (-40°F to +158°F)					
DISCRETE SECOND ORDER DISTORTION		< -100 dBc (measured at 60 MHz after CAT A3 6kV, 200A Ring wave on all ports with 30 MHz input carrier at 55 dBmV)					
SURGE PROTECTION		CAT A3 6kV, 200A Ring wave(1)					
IMPEDANCE		75 Ohms					

NOTE:

(1) Does not include drop passives in raceway housing

OTHER NOTES:

- Housing: Zinc Alloy EZDA3, Nickel-alloy plated
- Ground Screw: Carbon Steel 1010, blue-Zinc plated
- Seizure Pin: Phosphor Bronze C5191, Tin plated
- Corrosive protected housing
- SCTE compliant F ports
- Sealed F ports and UV protected label

Ordering Information

Part Number	Description
DM2	2-Way Splitter in a 2-way Splitter Housing
DM2R	2-Way Splitter in a Raceway Housing
DM3	Balanced 3-Way Splitter in a 3/4-Way Splitter Housing
DM3U	Unbalanced 3-Way Splitter in a 3/4-Way Splitter Housing
DM4	4-Way Splitter in a 3/4-Way Splitter Housing
DM8V	8-Way Splitter in an 8-Way Vertical Housing

Specifications subject to change without notice.

Directional Couplers:

CAT A3 6kV, 200A Ring Wave Protected Directional Coupler Specifications

SPECIFICATIONS		DMDC6(R)	DMDC8(R)	DMDC9(R)	DMDC12(R)	DMDC16(R)	DMDC20(R)
ITEM	FREQUENCY	QA (dB)	QA (dB)	QA (dB)	QA (dB)	QA (dB)	QA (dB)
TAP-LOSS	5-15 MHz	6 ± 0.5	8 ± 0.5	9 ± 0.5	12 ± 0.5	16 ± 0.5	20 ± 0.5
	15-50 MHz	6 ± 0.5	8 ± 0.5	9 ± 0.5	12 ± 0.5	16 ± 0.5	20 ± 0.5
	50-450 MHz	6 ± 0.5	8 ± 0.5	9 ± 0.5	12 ± 0.5	16 ± 0.5	20 ± 0.5
	450-750 MHz	6 ± 0.5	8 ± 0.5	9 ± 0.5	12 ± 0.5	16 ± 0.5	20 ± 0.5
	750-1002 MHz	6 ± 0.75	8 ± 0.75	9 ± 0.75	12 ± 0.75	16 ± 0.75	20 ± 0.75
INSERTION LOSS (Max)	5-15 MHz	1.8	1.8	1.4	0.9	0.6	0.6
	15-50 MHz	1.8	1.8	1.4	0.9	0.6	0.6
	50-450 MHz	1.8	1.8	1.4	0.9	0.6	0.6
	450-750 MHz	2.1	1.8	1.4	1.0	0.6	0.6
	750-1002 MHz	2.4	2.2	1.9	1.2	1.0	1.0
ISOLATION	5-15 MHz	28	28	28	28	30	33
	15-50 MHz	28	28	28	28	30	33
	50-450 MHz	25	25	25	25	30	30
	450-750 MHz	25	25	25	25	28	28
	750-1002 MHz	23	23	23	23	26	26
INPUT RETURN LOSS (Min)	5-15 MHz	20	20	20	20	22	22
	15-50 MHz	20	20	20	20	22	22
	50-450 MHz	22	22	22	22	22	22
	450-750 MHz	22	22	22	22	22	22
	750-1002 MHz	20	20	20	20	20	20
OUTPUT RETURN LOSS (Min)	5-15 MHz	20	20	20	20	22	22
	15-50 MHz	20	20	20	20	22	22
	50-450 MHz	20	20	20	20	22	22
	450-750 MHz	20	20	20	20	22	22
	750-1002 MHz	20	20	20	20	20	20
TAP RETURN LOSS (Min)	5-15 MHz	22	22	22	22	22	22
	15-50 MHz	22	22	22	22	22	22
	50-450 MHz	22	22	22	22	22	22
	450-750 MHz	22	22	22	22	22	22
	750-1002 MHz	20	20	20	20	20	20
RFI (Min)		120 dB					
TEMPERATURE RANGE		-40°C to +70°C (-40°F to +158°F)					
DISCRETE SECOND ORDER DISTORTION		< -100 dBc (measured at 60 MHz after CAT A3 6kV, 200A Ring wave on all ports with 30 MHz input carrier at 55 dBmV)					
SURGE PROTECTION		CAT A3 6kV, 200A Ring wave(1)					
IMPEDANCE		75 Ohms					

NOTES:

(1) Does not include drop passives in raceway housing

(R) = Optional Raceway Housing

OTHER NOTES:

- Housing: Zinc Alloy EZDA3, Nickel-alloy plated
- Ground Screw: Carbon Steel 1010, blue-Zinc plated
- Seizure Pin: Phosphor Bronze C5191, Tin plated
- Corrosive protected housing
- SCTE compliant F ports
- Sealed F ports and UV protected label

Ordering Information

Part Number	Description
DMDC*	*dB DC in a 2-Way Splitter Housing (* indicates value of DC)
DMDC*R	*dB DC in a Raceway Housing (* indicates value of DC)
DMDC6/2/HP	2-Way, 6 dB DC and High Pass Filter in a 3/4-Way Splitter Housing

Specifications subject to change without notice.

ATX

Return Bypass Drop Passives:

Return Bypass Drop Passive (DMRBP) Specifications

SPECIFICATIONS		DMRBP	
		5-42 MHz	54-1000 MHz
INSERTION LOSS	CATV IN to STB	< 1.5 dB	≥ 55 dB
	CATV or STB to VCR	≥ 35 dB	< 1.5 dB
GROUP DELAY	FORWARD CATV or STB to VCR	10nS/3.58 MHz Channel 2 5nS/3.58 MHz Channel 3 2.5nS/3.58 MHz Other Channels	
	RETURN CATV IN to STB	20nS/1 MHz 5-42 MHz 5nS/1 MHz 10-36 MHz	
RETURN LOSS (IN/OUT)	ALL PORTS	> 16 dB	> 16 dB
RFI		> 120 dB	> 120 dB
TEMPERATURE RANGE	-40°C to +70°C (-40°F to +158°F)		
INTERMODULATION	-110 dB (55 dBmV, 30 MHz Carrier)		
SURGE PROTECTION	CAT A3, 6KV Ring wave		
IMPEDANCE	75 Ohms		

Applications:

Set Top Box Applications:

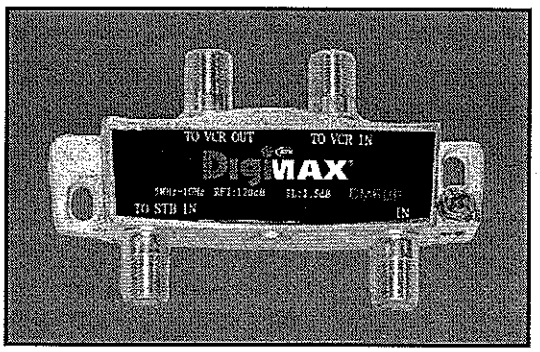
- Allows for STB & VCR to be properly configured so that return path communications are not blocked, while also enabling a subscriber to watch a digital channel & record an analog channel

Forward Path Signal Conditioning:

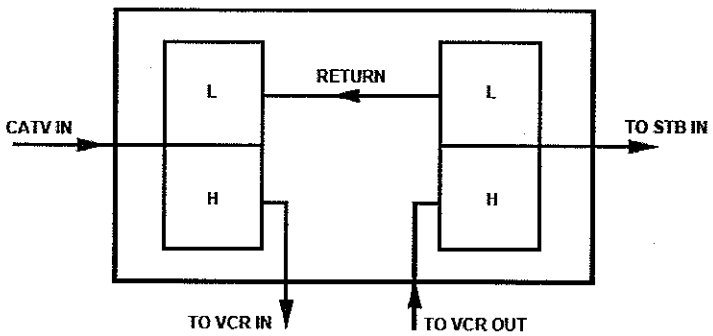
- Equalization or padding of the forward path can be accomplished without effecting the return path

Bi-Directional Amplifiers:

- A forward path amplifier can easily be return path enabled



Functional Schematic



Ordering Information

Part Number	Description
DMRBP	Return Bypass Drop Passive

Specifications subject to change without notice.

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MAXNET® II

Platinum Series

Pat.# U.S. 7,142,414

QMP1000
Forward RF Amplifier Manual

Although every effort has been taken to ensure the accuracy of this document it may be necessary, without notice, to make amendments or correct omissions.
Specifications subject to change without notice.

1.2. Technical Specifications

PART NUMBER (6)	GAIN		GAIN AND SLOPE CONTROL (1)	TEST POINTS (7)	RETURN LOSS (5)	DISTORTION PERFORMANCE (3,4)			NOISE FIGURE (4)	OPERATING CURRENT (2)
	BW (MHz)	GAIN (dB)	PLUG-IN	I/O (dB)	I/O (dB)	OUTPUT LEVEL (dBmV)	CTB (-dB)	CSO (-dB)	(dB)	(mA)
QMP1000-17GP	40-1000	17 +/- 1.0	INPUT / OUTPUT	20 +/- 1.0	16/15	43	74	72	6	470
QMP1000-21GP	40-1000	21 +/- 1.0	INPUT / OUTPUT	20 +/- 1.0	16/15	43	74	72	6	470
QMP1000-28GP	40-1000	28 +/- 1.0	INPUT / INTERSTAGE	20 +/- 1.0	16/15	43	74	72	6.5	520
QMP1000-31GP	40-1000	31 +/- 1.0	INPUT / INTERSTAGE	20 +/- 1.0	16/15	43	74	72	6.5	520
QMP1000-34GP	40-1000	34 +/- 1.0	INPUT / INTERSTAGE	20 +/- 1.0	16/15	43	74	72	6.5	520
QMP1000-17GPF	40-1000	17 +/- 1.0	INPUT / OUTPUT	20 +/- 1.0	16/15	43	74	72	6	470
QMP1000-21GPF	40-1000	21 +/- 1.0	INPUT / OUTPUT	20 +/- 1.0	16/15	43	74	72	6	470
QMP1000-28GPF	40-1000	28 +/- 1.0	INPUT / INTERSTAGE	20 +/- 1.0	16/15	43	74	72	6.5	520
QMP1000-31GPF	40-1000	31 +/- 1.0	INPUT / INTERSTAGE	20 +/- 1.0	16/15	43	74	72	6.5	520
QMP1000-34GPF	40-1000	34 +/- 1.0	INPUT / INTERSTAGE	20 +/- 1.0	16/15	43	74	72	6.5	520

NOTES:

1. See functional schematics.
2. DC load current at + 24V DC.
3. 79 CW NTSC Analog Channels from 54-550 MHz with 320 MHz QAM loading 6 dB below Analog Carrier levels.
4. Specified with 0 dB plug-in attenuators and 0 dB plug-in EQs.
5. Return Loss is 15 dB minimum from 870 MHz to 1000 MHz.
6. GP = MCX connectors; GPF = F connectors.
7. At input test point specified with 0 dB plug-in attenuator and 0 dB plug-in EQ.

OTHER NOTES:

Minimum / Maximum composite RF detection level is 20.5/80 dBmV.

Table #2: Technical Specifications

MAXNET® II

Platinum Series

Pat.# U.S. 7,142,414

MPAC / MPDC
Modular Power Supply Manual

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Specifications subject to change without notice.

1.2. Technical Specifications

ELECTRICAL SPECIFICATIONS	MPAC-110	MPAC-220	MPDC
INPUT			
INPUT VOLTAGE	110 VAC +/- 10%	220 VAC +/- 10%	-48.0 +/- 12.0 VDC
FREQ	50/60 Hz	50/60 Hz	DC
INPUT CURRENT (Max)	4.0 Amps AC	2.2 Amps AC	5.0 Amps DC (-48 VDC)
POWER FACTOR	> 0.6	> 0.6	NA
EFFICIENCY	> 0.8	> 0.8	> 0.8
OUTPUT			
OUTPUT VOLTAGE	24.0 +/- 1.0 VDC	24.0 +/- 1.0 VDC	24.0 +/- 1.0 VDC
DC OUTPUT CURRENT (Max)	8 Amps	8 Amps	8 Amps
RIPPLE VOLTAGE (Max)	200 mV P-P	200 mV P-P	200 mV P-P
MAXIMUM POWER OUTPUT	250 W	250 W	250 W
OTHER			
APPROVALS	Component: cULus, FCC Entire Module: Approvals Pending (cULus, FCC, CE)	Component: cULus, FCC Entire Module: Approvals Pending (cULus, FCC, CE)	Component: cULus, FCC Entire Module: Approvals Pending (cULus, FCC, CE)
24V POWER INDICATOR	Front: Green LED	Front: Green LED	Front: Green LED
ALARM STATUS	Front: Red Flash LED	Front: Red Flash LED	Front: Red Flash LED
TERMINAL BLOCK WIRING	# 12 AWG	# 12 AWG	# 12 AWG

Table #2: Technical Specifications

MAXNET® II

Platinum Series

Pat.# U.S. 7,142,414

MPRX-8
Single Return Path Optical Receiver Manual

Although every effort has been taken to ensure the accuracy of this document it may be necessary, without notice, to make amendments or correct omissions.
Specifications subject to change without notice.

PRODUCT DESCRIPTION

1. Product Description

The MPRX-8 MAXNET II module is a Single Return Path Optical Receiver with an integrated 8-way splitter located on the RF output of the receiver. The integrated splitter allows for maximized rack space saving when many receivers are mounted in the same chassis. The MPRX-8 receiver is dual-width, taking up two slots in the Active MAXNET II Chassis and is powered through a hot-swapping backplane in the Active MAXNET II Chassis. An appropriate MAXNET II Power Supply in the Active MAXNET II Chassis powers the module. The MPRX-8 module features the standard MAXNET II functionality including high-density packaging through the use of MCX coaxial cable connectors in conjunction with Mini RG-59 Type coaxial cable. Also featured are: front access alarm/status LED indicators, a -20 dB test point and the capability of module status monitoring through SNMP based Managers. The MAXNET II SNMP interface is HMS compliant.

Please refer to the web page for up-to-date specifications – www.atxnetworks.com

Part Number	Description
MPRX-8	Single RPR with 8 RF Outputs

Table #1: Ordering Information

1.1. Functional Diagrams

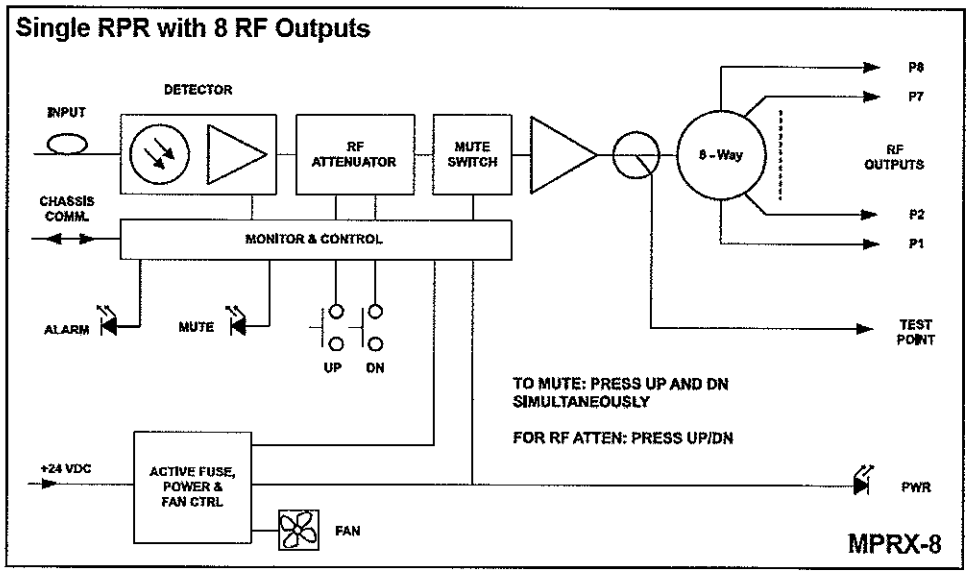


Figure #1: Single Return Path Optical Receiver Functional Diagram

1.2. Technical Specifications

SPECIFICATIONS	MPRX-8
OPTICAL	
WAVELENGTH	1290 - 1600 nm
INPUT POWER	-17 to +3 dBm
OPTICAL RETURN LOSS (Min)	45 dB
CONNECTOR TYPE	SC/APC (std.), Others on Special Order
RF OUTPUT PERFORMANCE	
BANDWIDTH	5 - 250 MHz
NOMINAL OUTPUT LEVEL[1]	25 +/- 2.0 dBmV
RESPONSE FLATNESS	+/- 0.5 dB / 6 MHz
RF TEST POINT (Relative to RF Out)	-10.0 +/- 1.0 dB
RF OUTPUT LEVEL ADJUST	31.5 dB in 0.5 dB increments Front access pushbutton, HMS SNMP v2c, Web Browser, Proprietary Network Interface
PORT TO PORT ISOLATION	> 30 dB, 5-250 MHz
RX TO RX ISOLATION	N/A
RECEIVER MUTE (ISOLATION)	> 70 dB, 5-85 MHz > 60 dB, 85-250 MHz Front access pushbutton, HMS SNMP v2c, Web Browser, Proprietary Network Interface
RX SWITCH CONTROL[2]	N/A
SECOND ORDER DISTORTION[3]	> 60 dBc
THIRD ORDER DISTORTION[3]	> 60 dBc
OUTPUT RETURN LOSS	20 dB
OTHER	
RECEIVER STATUS INDICATION	Front LEDs, HMS SNMP v2c, Web Browser, Proprietary Network Interface
CURRENT[4]	290mA

NOTES:
(1) -9 dBm and 7% OMI per channel, no RF attenuation.
(2) Redundant RPR switch position can be manual or automatic. Automatic control is based on user defined received optical power threshold settings.
(3) Two laser test: -3 dBm and 40% OMI per laser. Measurement made with 40 dBmV carrier level at internal receiver output, before any splitting circuitry.
(4) DC current required from 24V chassis bus.

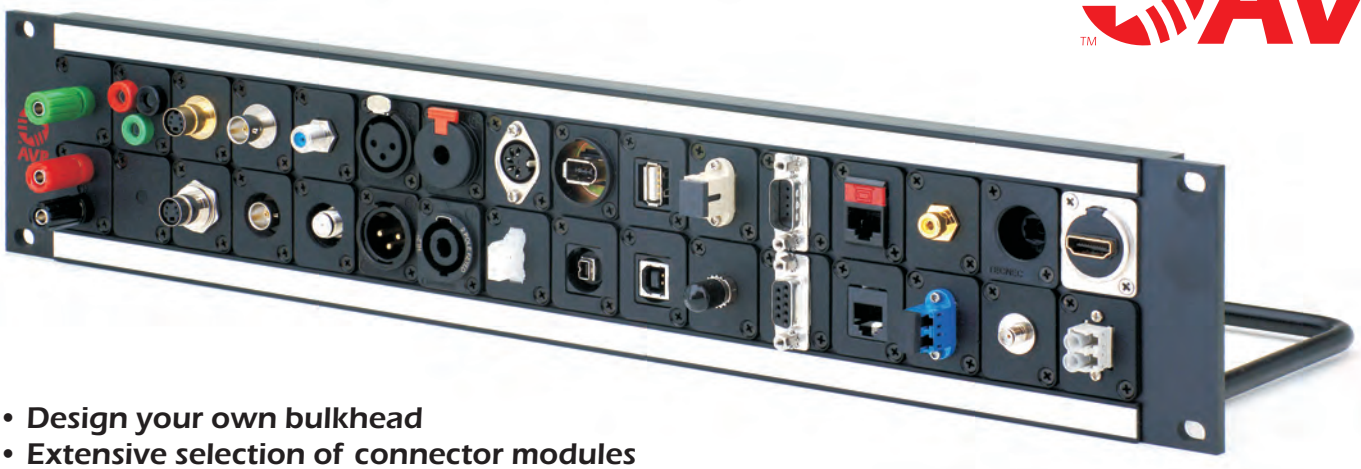
Table #2: Technical Specifications

advanced media technologies®

MODEL

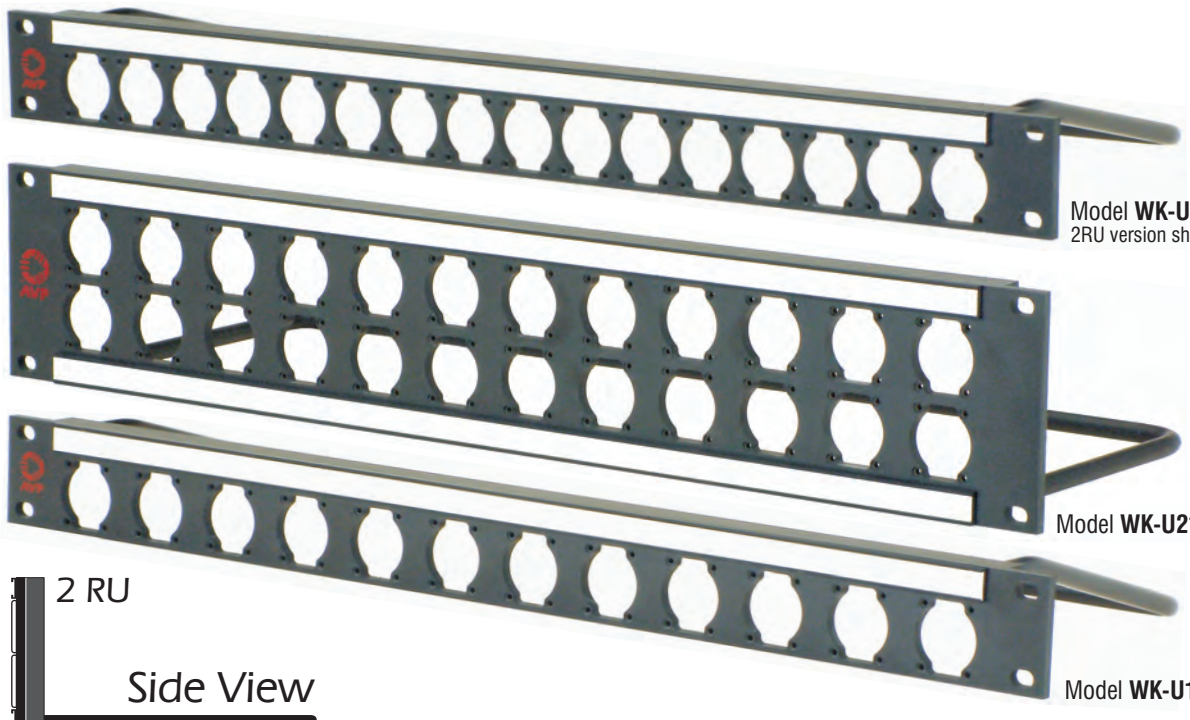
UNIVERSAL PANEL SYSTEM

UNIVERSAL BULKHEAD PANEL SYSTEM



- Design your own bulkhead
- Extensive selection of connector modules
- 1RU, 2RU & 3RU, 16 & 12 position available
- Strain relief cable bar is standard

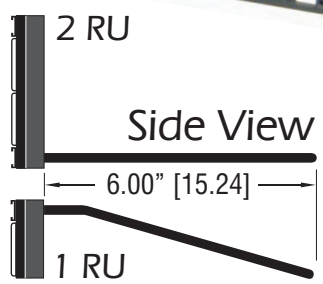
Model **WK-U216E2-Z**
with optional Connector Kits



Model **WK-U116E1-Z**
2RU version shown above

Model **WK-U212E2-Z**

Model **WK-U112E1-Z**



Full List of Universal Connector Kits on the Rear

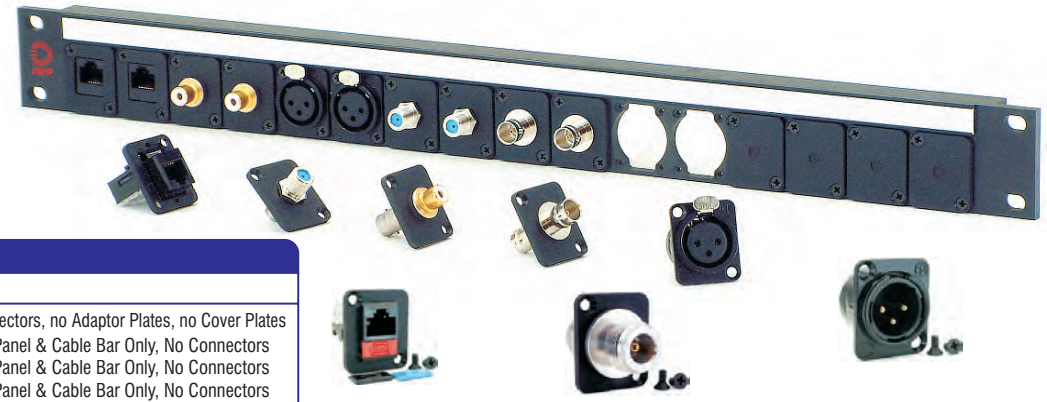
AVP™

Insulated Bulkhead

Partners in Broadcast, Telecom & Satellite Solutions

Modular Bulkhead

Universal Connector Kits



Ordering Information

Model	Description
Universal Panel - Panel with Cable Bar Only; no Connectors, no Adaptor Plates, no Cover Plates	
WK-U216E3-Z	3RU, 2x16 Universal Panel, Panel & Cable Bar Only, No Connectors
WK-U216E2-Z	2RU, 2x16 Universal Panel, Panel & Cable Bar Only, No Connectors
WK-U116E1-Z	1RU, 1x16 Universal Panel, Panel & Cable Bar Only, No Connectors
WK-U212E3-Z	3RU, 2x12 Universal Panel, Panel & Cable Bar Only, No Connectors
WK-U212E2-Z	2RU, 2x12 Universal Panel, Panel & Cable Bar Only, No Connectors
WK-U112E1-Z	1RU, 1x12 Universal Panel, Panel & Cable Bar Only, No Connectors
BUILD3	3 RU Assembly of connectors to panel
BUILD2	2 RU Assembly of connectors to panel
BUILD1	1 RU Assembly of connectors to panel

Ordering Information

Model	Description
Connector Kits, kits include all components necessary to mount connector to panel	

Audio

UE3R-C	EDAC Receptacle, 3 pin crimp, adaptor plate(s), hardware
UE3R-S	EDAC Receptacle, 3 pin solder, adaptor plate(s), hardware
UMIDI	MIDI Isolated Connector, solder type, hardware
UNL2MP	Speakon Connector, 2-Pole, solder termination, panel mount, hardware
UNL4MP	Speakon Connector, 4-Pole, solder termination, panel mount, hardware
UNL4MP-B	Speakon Connector, 4-Pole, black/gold contacts, solder, panel mount, h/w
UNX331	XLR, female, 3 pin, silver, solder termination, panel mount, hardware
UNY331	XLR, male, 3 pin, silver, solder termination, panel mount, hardware
UNX330	XLR female, 3 pin, black/gold contacts, solder, panel mount, hardware
UNY330	XLR male, 3 pin, black/gold contacts, solder, panel mount, hardware
UNX430	XLR female, 4 pin, black/gold contacts, solder, panel mount, hardware
UNY430	XLR male, 4 pin, black/gold contacts, solder, panel mount, hardware
UNX530	XLR female, 5 pin, black/gold contacts, solder, panel mount, hardware
UNY530	XLR male, 5 pin, black/gold contacts, solder, panel mount, hardware
UNX630	XLR female, 6 pin, black/gold contacts, solder, panel mount, hardware
UNX631-S	XLR female, 6 pin, silver, solder, Switchcraft equivalent, panel mount, h/w
UNY630	XLR male, 6 pin, black/gold contacts, solder, panel mount, hardware
UNX730	XLR female, 7 pin, black/gold contacts, solder, panel mount, hardware
UNY730	XLR male, 7 pin, black/gold contacts, solder, panel mount, hardware
URCA-R	RCA Feedthru, red, adaptor plate(s), hardware
URCA-W	RCA Feedthru, white, adaptor plate(s), hardware
URCA-Y	RCA Feedthru, yellow, adaptor plate(s), hardware
US35J	Stereo Mini-Audio Jack 3.5mm, female, solder, adaptor plate(s), hardware
USPJ	1/4" Stereo Phone Jack, solder termination, panel mount, hardware

Video

UDVI-IS	DVI-I Single Link Feedthru, F-F, adaptor plate(s), hardware (req 2 positions)
UHF310	F Style Feedthru, AVP HF310, adaptor plate(s), hardware
UFJ310R	F Style Feedthru, recessed, AVP HF310, adaptor plate(s), hardware
UJJ300	BNC Coaxial Feedthru, 3 GHz, AVP JJ300, adaptor plate(s), hardware
UJJ300R	BNC Coaxial Feedthru, 3 GHz, recessed, AVP JJ300, adaptor plate(s), h/w
UBNC50-F	BNC Coaxial Feedthru, 50 Ohm, F-F, adapter plate(s), hardware
USMA	SMA 50 Ohm Coaxial Connector, feed-thru, f-f, adaptor plate(s), hardware
USVHS-4G	SVHS Feedthru, 4 pin, gold contacts, adaptor plate(s), hardware
USVHS-4N	SVHS Feedthru, 4 pin, nickel contacts, adaptor plate(s), hardware

Ordering Information

Model	Description
Connector Kits, kits include all components necessary to mount connector to panel	

Data, Network

UDB9-CF	DB9 Female, crimp pin contacts, adaptor plate(s), hardware
UDB9-CM	DB9 Male, crimp pin contacts, adaptor plate(s), hardware
UDB9-SF	DB9 Female, solder pin contacts, adaptor plate(s), hardware
UDB9-SM	DB9 Male, solder pin contacts, adaptor plate(s), hardware
UDB9-SCF	DB9 Female, solder cup pin contacts, adaptor plate(s), hardware
UDB9-SCM	DB9 Male, solder cup pin contacts, adaptor plate(s), hardware
UFW-4	FireWire, 4 pin, IEEE 1394, Feedthru, female-female, adaptor plate(s), hardware
UFW-6	FireWire, 6 pin, IEEE 1394, Feedthru, female-female, chassis mount, hardware
UHD15-CF	HD15/VGA 15 pin connector, female, crimp, adaptor plate(s), hardware
UHD15-CM	HD15/VGA 15 pin connector, male, crimp, adaptor plate(s), hardware
UHDMI-DFF	HDMI feedthru, female-female, chassis mount, hardware
UMD66FF	Mini Din Feedthru, 6 pin female-female, PS/2, keyboard, adaptor plate(s), hardware
URJ11-F	RJ11 6 pos/6 con, Feedthru, female-female, adaptor plate(s), hardware
URJ11	RJ11 6 pos/6 con, IDC interface, adaptor plate(s), hardware (tool-less termination)
URJ45-F	RJ45 CAT5E, Feedthru, female-female, adaptor plate(s), hardware
URJ45-5E	RJ45 CAT5E, 110 interface, no door, adaptor plate(s), hardware (req. 110 punch tool)
URJ45-6	RJ45 CAT6, 110 interface, no door, adaptor plate(s), hardware (tool-less termination)
URJ45-6A	RJ45 CAT6A, 110 interface, no door, adaptor plate(s), hardware (req. 110 punch tool)
URJ45-6AS	RJ45 CAT6A, EMI/RFI Shielding, die-cast housing, adaptor plate(s), h/w (tool-less term.)
URJ45-6F	RJ45 CAT6, Feedthru, female-female, adaptor plate(s), hardware
USB-A	USB Type A Feedthru, female-female, adaptor plate(s), hardware
USB-B	USB Type B Feedthru, female-female, adaptor plate(s), hardware
USB-AB	USB Type A front, Type B on rear, female-female, adaptor plate(s), hardware

Fiber Optic

UFO-ST	ST fiber optic coupler, feed-thru, female-female, adaptor plate(s), hardware
ULCD-T	LC Duplex Adaptor suitable for singlemode & multimode applications, adaptor plate(s), h/w
ULCD-MM	LC Duplex Adaptor for Multimode applications, adaptor plate(s), hardware
USC-0	SC Multimode fiber optic connector, feed-thru, female-female, adaptor plate(s), hardware
USC-1	SC Singlemode/Multimode fiber optic connector, feed-thru, f-f, adaptor plate(s), hardware
UTOS	Toslink optical audio coupler, feed-thru, adaptor plate(s), hardware

Miscellaneous

UCP	Blank Cover Plate, black, hardware, covers one position
UB2-M	Banana Jacks, 2, red/black, solder, adaptor plate(s), hardware
UB3-M	Banana Jacks, 3, red/black/green, solder, adaptor plate(s), hardware
UBP1-S	Binding Post, single, green, solder, will accept banana jacks, adaptor plate(s), h/w
UBP2-S	Binding Posts, double, red/black, solder, will accept banana jacks, adaptor plate(s), h/w
UTNC-F	TNC Coaxial Adapter, Feedthru, F-F, 50 Ohm, adaptor plate(s), hardware
UMTS-L	Miniature Toggle Switch, DPDT, Locking Handle, 3 Amps, 250VAC, Solder, adaptor plate(s), h/w

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Detailed Specifications & Technical Data

METRIC MEASUREMENT VERSION

1266A Multi-Conductor - Single-Pair Cable

For more Information
please call

1-800-Belden1

Description:

22 AWG stranded (7x30) TC conductors, polypropylene insulation, twisted pair, overall Beldfoil shield (100% coverage), 24 AWG stranded TC drain wire, PVC jacket.

Physical Characteristics (Overall)

Conductor

AWG:

# Pairs	AWG	Stranding	Conductor Material
1	22	7x30	TC - Tinned Copper

Insulation

Insulation Material:

Insulation Material	Wall Thickness (mm)
PP - Polypropylene	0.254

Outer Shield

Outer Shield Material:

Outer Shield Trade Name	Type	Outer Shield Material	Coverage (%)
Beldfoil®	Tape	Aluminum Foil-Polyester Tape	100

Outer Shield Drain Wire AWG:

AWG	Stranding	Drain Wire Conductor Material
24	7x32	TC - Tinned Copper

Outer Jacket

Outer Jacket Material:

Outer Jacket Material	Nom. Wall Thickness (mm)
PVC - Polyvinyl Chloride	0.508

Overall Cable

Overall Nominal Diameter:	3.632 mm

Pair

Pair Color Code Chart:

Number	Color
1	Black & Red

Pair Lay Length & Direction:

Lay Length (mm)	Twists/ft. (twist/m)
44.449825	22.508

Mechanical Characteristics (Overall)

Operating Temperature Range:	-20°C To +60°C
UL Temperature Rating:	60°C
Bulk Cable Weight:	20.835 Kg/Km
Max. Recommended Pulling Tension:	111.205 N
Min. Bend Radius (Install)/Minor Axis:	38.100 mm

Applicable Specifications and Agency Compliance (Overall)

Applicable Standards & Environmental Programs

NEC/(UL) Specification:	CM
CEC/C(UL) Specification:	CM
EU CE Mark:	Yes
EU Directive 2000/53/EC (ELV):	Yes
EU Directive 2002/95/EC (RoHS):	Yes
EU RoHS Compliance Date (mm/dd/yyyy):	01/01/2004
EU Directive 2002/96/EC (WEEE):	Yes
EU Directive 2003/11/EC (BFR):	Yes
CA Prop 65 (CJ for Wire & Cable):	Yes
MII Order #39 (China RoHS):	Yes

Flame Test

UL Flame Test:	UL1685 UL Loading

Plenum/Non-Plenum

Plenum (Y/N):	No

Electrical Characteristics (Overall)

Nom. Characteristic Impedance:

Impedance (Ohm)
55

Nom. Inductance:

Inductance (µH/m)
0.59058

Nom. Capacitance Conductor to Conductor:

Capacitance (pF/m)
98.43

Nom. Capacitance Cond. to Other Conductor & Shield:

Capacitance (pF/m)
177.174

Nominal Velocity of Propagation:

VP (%)
66

Nominal Delay:

Delay (ns/m)
4.9215

Nom. Conductor DC Resistance:

DCR @ 20°C (Ohm/km)
49.215

Nominal Outer Shield DC Resistance:

DCR @ 20°C (Ohm/km)
59.058

Max. Operating Voltage - UL:

Voltage
300 V RMS

Max. Recommended Current:

Current
2.3 Amps per conductor @ 25°C

Detailed Specifications & Technical Data

METRIC MEASUREMENT VERSION

1266A Multi-Conductor - Single-Pair Cable

Notes (Overall)

Notes: Unique design features lower capacitance and greater flexibility than standard audio pair constructions.

Related Documents:

No related documents are available for this product

Put Ups and Colors:

Item #	Putup	Ship Weight	Color	Notes	Item Desc
1266A 001U1000	305 MT	6.804 KG	BROWN		2 #22 PP FS PVC
1266A 002U1000	305 MT	6.804 KG	RED		2 #22 PP FS PVC
1266A 003U1000	305 MT	6.804 KG	ORANGE		2 #22 PP FS PVC
1266A 004U1000	305 MT	6.804 KG	YELLOW		2 #22 PP FS PVC
1266A 005U1000	305 MT	6.804 KG	GREEN, DARK		2 #22 PP FS PVC
1266A 006U1000	305 MT	6.804 KG	BLUE, LIGHT		2 #22 PP FS PVC
1266A 007U1000	305 MT	6.804 KG	VIOLET		2 #22 PP FS PVC
1266A 008U1000	305 MT	6.804 KG	GRAY		2 #22 PP FS PVC
1266A 009U1000	305 MT	6.804 KG	WHITE		2 #22 PP FS PVC
1266A 010U1000	305 MT	6.804 KG	BLACK		2 #22 PP FS PVC
1266A 0101000	305 MT	6.804 KG	BLACK	C	2 #22 PP FS PVC

Notes:
C = CRATE REEL PUT-UP.

Revision Number: 1 Revision Date: 04-18-2008

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Belden declares this product to be in compliance with EU LVD (Low Voltage Directive 73/23/EEC), as amended by directive 93/68/EEC.

Detailed Specifications & Technical Data

ENGLISH MEASUREMENT VERSION

1694A Coax - Low Loss Serial Digital Coax

For more Information
please call

1-800-Belden1

Description:

RG-6/U Type, 18 AWG solid .040" bare copper conductor, gas-injected foam HDPE insulation, Duofoil® + tinned copper braid shield (95% coverage), PVC jacket.

Physical Characteristics (Overall)

Conductor

AWG:

# Coax	AWG	Stranding	Conductor Material	Dia. (in.)
1	18	Solid	BC - Bare Copper	.040

Insulation

Insulation Material:

Insulation Material	Dia. (in.)
Gas-injected FHDPE - Foam High Density Polyethylene	.180

Outer Shield

Outer Shield Material:

Layer #	Outer Shield Trade Name	Type	Outer Shield Material	Coverage (%)
1	Duofoil®	Tape	Aluminum Foil-Polyester Tape-Aluminum Foil	100
2		Braid	TC - Tinned Copper	95

Outer Jacket

Outer Jacket Material:

Outer Jacket Material
PVC - Polyvinyl Chloride

Overall Cable

Overall Nominal Diameter:	0.274 in.

Mechanical Characteristics (Overall)

Operating Temperature Range:	-30°C To +75°C
UL Temperature Rating:	75°C
Bulk Cable Weight:	41 lbs/1000 ft.
Max. Recommended Pulling Tension:	69 lbs.
Min. Bend Radius (Install)/Minor Axis:	2.750 in.

Applicable Specifications and Agency Compliance (Overall)

Applicable Standards & Environmental Programs

NEC/(UL) Specification:	CMR
CEC/C(UL) Specification:	CMG
EU CE Mark:	Yes
EU Directive 2000/53/EC (ELV):	Yes
EU Directive 2002/95/EC (RoHS):	Yes
EU RoHS Compliance Date (mm/dd/yyyy):	01/01/2004
EU Directive 2002/96/EC (WEEE):	Yes

EU Directive 2003/11/EC (BFR):	Yes
CA Prop 65 (CJ for Wire & Cable):	Yes
MII Order #39 (China RoHS):	Yes
RG Type:	6/U

Flame Test

UL Flame Test:	UL1666 Vertical Shaft

Suitability

Suitability - Indoor:	Yes
Suitability - Outdoor:	Yes - Black only
Suitability - Aerial:	Yes - Black only, when supported by a messenger wire

Plenum/Non-Plenum

Plenum (Y/N):	No
Plenum Number:	1695A

Electrical Characteristics (Overall)

Nom. Characteristic Impedance:

Impedance (Ohm)
75

Nom. Inductance:

Inductance (µH/ft)
0.106

Nom. Capacitance Conductor to Shield:

Capacitance (pF/ft)
16.2

Nominal Velocity of Propagation:

VP (%)
82

Nominal Delay:

Delay (ns/ft)
1.24

Nom. Conductor DC Resistance:

DCR @ 20°C (Ohm/1000 ft)
6.4

Nominal Outer Shield DC Resistance:

DCR @ 20°C (Ohm/1000 ft)
2.8

Nom. Attenuation:

Freq. (MHz)	Attenuation (dB/100 ft.)
1.000	0.240
3.580	0.440
5.000	0.520
6.000	0.570
7.000	0.610
10.000	0.710
12.000	0.780
25.000	1.080
67.500	1.650
71.500	1.690
88.500	1.860
100.000	1.950
135.000	2.240
143.000	2.300

180.000	2.570
270.000	3.170
360.000	3.690
540.000	4.600
720.000	5.380
750.000	5.500
1000.000	6.420
1500.000	7.990
2000.000	9.370
2250.000	10.010
3000.000	11.780
4500.000	14.920

Max. Operating Voltage - UL:

Voltage
300 V RMS

Other Electrical Characteristic 1: Impedance tested in accordance with ASTM D-4566 paragraph 43.2, option 2 using a 75 Ohm fixed bridge and termination. 75 +/- 1.5 Ohms

Other Electrical Characteristic 2: Return Loss tested in accordance with ASTM D-4566 paragraph 45.3, using a 75 Ohm fixed bridge and termination.

Minimum Return Loss:

Start Freq. (MHz)	Stop Freq. (MHz)	Min. RL (dB)
5	1600	23
1600	4500	21

Sweep Test

Sweep Testing: 100% Sweep tested 5 MHz to 4.5 GHz.

Misc. Information (Overall)

Notes (Overall)

Notes: Also available in bundled versions. See 7710A through 7713A.

Related Documents:

No related documents are available for this product

Put Ups and Colors:

Item #	Putup	Ship Weight	Color	Notes	Item Desc
1694A N3U1000	1,000 FT	45.000 LB	GREEN, MIL	C	#18 PE/GIFHDPE SH FR PVC
1694A N3U5000	5,000 FT	225.000 LB	GREEN, MIL	C N	#18 PE/GIFHDPE SH FR PVC
1694A 0011000	1,000 FT	45.000 LB	BROWN	C	#18 PE/GIFHDPE SH FR PVC
1694A 0015000	5,000 FT	225.000 LB	BROWN	C N	#18 PE/GIFHDPE SH FR PVC
1694A 0021000	1,000 FT	45.000 LB	RED	C	#18 PE/GIFHDPE SH FR PVC
1694A 0025000	5,000 FT	225.000 LB	RED	C N	#18 PE/GIFHDPE SH FR PVC
1694A 003CUT	1 FT	0.046 LB	ORANGE		#18 PE/GIFHDPE SH FR PVC
1694A 0031000	1,000 FT	45.000 LB	ORANGE	C	#18 PE/GIFHDPE SH FR PVC
1694A 0041000	1,000 FT	45.000 LB	YELLOW	C	#18 PE/GIFHDPE SH FR PVC
1694A 0061000	1,000 FT	45.000 LB	BLUE, LIGHT	C	#18 PE/GIFHDPE SH FR PVC
1694A 0065000	5,000 FT	225.000 LB	BLUE, LIGHT	C N	#18 PE/GIFHDPE SH FR PVC
1694A 007CUT	1 FT	0.046 LB	VIOLET		#18 PE/GIFHDPE SH FR PVC
1694A 0071000	1,000 FT	45.000 LB	VIOLET	C	#18 PE/GIFHDPE SH FR PVC
1694A 0075000	5,000 FT	225.000 LB	VIOLET	C N	#18 PE/GIFHDPE SH FR PVC
1694A 0081000	1,000 FT	45.000 LB	GRAY	C	#18 PE/GIFHDPE SH FR PVC
1694A 0085000	5,000 FT	225.000 LB	GRAY	C N	#18 PE/GIFHDPE SH FR PVC
1694A 0091000	1,000 FT	45.000 LB	WHITE	C	#18 PE/GIFHDPE SH FR PVC
1694A 0101000	1,000 FT	45.000 LB	BLACK	C	#18 PE/GIFHDPE SH FR PVC
1694A 010500	500 FT	22.500 LB	BLACK	C	#18 PE/GIFHDPE SH FR PVC
1694A 0105000	5,000 FT	225.000 LB	BLACK	C N	#18 PE/GIFHDPE SH FR PVC

Notes:

C = CRATE REEL PUT-UP.
N = FINAL PUT-UP LENGTH MAY VARY -0% TO +10% FROM LENGTH SHOWN.

Revision Number: 13 Revision Date: 02-22-2010

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Belden declares this product to be in compliance with EU LVD (Low Voltage Directive 73/23/EEC), as amended by directive 93/68/EEC.

Detailed Specifications & Technical Data

ENGLISH MEASUREMENT VERSION

1695A Coax - Low Loss Serial Digital Coax

For more Information
please call

1-800-Belden1

Description:

RG-6/U type, 18 AWG solid .040" bare copper conductor, plenum, foam FEP insulation, Duofoil® + tinned copper braid shield (95% coverage), Flamarrest® jacket.

Physical Characteristics (Overall)

Conductor

AWG:

# Coax	AWG	Stranding	Conductor Material	Dia. (in.)
1	18	Solid	BC - Bare Copper	.040

Insulation

Insulation Material:

Insulation Trade Name	Insulation Material	Dia. (in.)
Teflon®	FFEP - Foam Fluorinated Ethylene Propylene	.170

Outer Shield

Outer Shield Material:

Layer #	Outer Shield Trade Name	Type	Outer Shield Material	Coverage (%)
1	Duofoil®	Tape	Aluminum Foil-Polyester Tape-Aluminum Foil	100
2		Braid	TC - Tinned Copper	95

Outer Jacket

Outer Jacket Material:

Outer Jacket Trade Name	Outer Jacket Material
Flamarrest®	LS PVC - Low Smoke Polyvinyl Chloride

Overall Cable

Overall Nominal Diameter:	0.234 in.

Mechanical Characteristics (Overall)

Operating Temperature Range:	-20°C To +75°C
UL Temperature Rating:	75°C
Bulk Cable Weight:	41 lbs/1000 ft.
Max. Recommended Pulling Tension:	92 lbs.
Min. Bend Radius (Install)/Minor Axis:	2.500 in.

Applicable Specifications and Agency Compliance (Overall)

Applicable Standards & Environmental Programs

NEC/(UL) Specification:	CMP
CEC/C(UL) Specification:	CMP
EU CE Mark:	No
EU Directive 2000/53/EC (ELV):	Yes
EU Directive 2002/95/EC (RoHS):	Yes
EU RoHS Compliance Date (mm/dd/yyyy):	04/01/2005
EU Directive 2002/96/EC (WEEE):	Yes

EU Directive 2003/11/EC (BFR):	Yes
CA Prop 65 (CJ for Wire & Cable):	Yes
MII Order #39 (China RoHS):	Yes
RG Type:	6/U

Flame Test

UL Flame Test:	NFPA 262
CSA Flame Test:	FT6

Suitability

Suitability - Outdoor:	No

Plenum/Non-Plenum

Plenum (Y/N):	Yes
Non-Plenum Number:	1694A

Electrical Characteristics (Overall)

Nom. Characteristic Impedance:

Impedance (Ohm)
75

Nom. Inductance:

Inductance (µH/ft)
0.103

Nom. Capacitance Conductor to Shield:

Capacitance (pF/ft)
16.1

Nominal Velocity of Propagation:

VP (%)
82

Nominal Delay:

Delay (ns/ft)
1.24

Nom. Conductor DC Resistance:

DCR @ 20°C (Ohm/1000 ft)
6.4

Nominal Outer Shield DC Resistance:

DCR @ 20°C (Ohm/1000 ft)
2.8

Nom. Attenuation:

Freq. (MHz)	Attenuation (dB/100 ft.)
1.000	0.240
3.580	0.450
5.000	0.550
7.000	0.650
10.000	0.750
67.500	1.740
71.500	1.780
88.500	1.940
100.000	2.100
135.000	2.400
143.000	2.500
180.000	2.800
270.000	3.400
360.000	4.000
540.000	5.200
720.000	6.100

750.000	6.200
1000.000	7.300
1500.000	9.200
2000.000	10.900
2250.000	11.600
3000.000	13.700
4500.000	19.900

Max. Operating Voltage - UL:

Voltage
300 V RMS

Other Electrical Characteristic 1: Impedance tested in accordance with ASTM D 4566 - 05 paragraph 48.2, option 2 using a 75 Ohm fixed bridge and termination.

Other Electrical Characteristic 2: Return Loss tested in accordance with ASTM D 4566 - 05 paragraph 50.3, using a 75 Ohm fixed bridge and termination.

Minimum Return Loss:

Start Freq. (MHz)	Stop Freq. (MHz)	Min. RL (dB)
5.000	1600.000	23.000
1600.000	4500.000	21.000

Sweep Test

Sweep Testing: 100% Sweep tested 5 MHz to 4.5 GHz.

Notes (Overall)

Notes: Teflon® is a registered trademark of E. I. duPont de Nemours and Co. used under license by Belden, Inc.

Related Documents:

No related documents are available for this product

Put Ups and Colors:

Item #	Putup	Ship Weight	Color	Notes	Item Desc
1695A N3U1000	1,000 FT	44.000 LB	GREEN, MIL	C	#18 FFEP SH FLRST
1695A 0011000	1,000 FT	44.000 LB	BROWN	C	#18 FFEP SH FLRST
1695A 0021000	1,000 FT	44.000 LB	RED	C	#18 FFEP SH FLRST
1695A 0031000	1,000 FT	44.000 LB	ORANGE	C	#18 FFEP SH FLRST
1695A 0041000	1,000 FT	44.000 LB	YELLOW	C	#18 FFEP SH FLRST
1695A 0061000	1,000 FT	44.000 LB	BLUE, LIGHT	C	#18 FFEP SH FLRST
1695A 0071000	1,000 FT	44.000 LB	VIOLET	C	#18 FFEP SH FLRST
1695A 0081000	1,000 FT	44.000 LB	GRAY	C	#18 FFEP SH FLRST
1695A 0101000	1,000 FT	40.000 LB	BLACK	C	#18 FFEP SH FLRST
1695A 010500	500 FT	22.500 LB	BLACK	C	#18 FFEP SH FLRST
1695A 8771000	1,000 FT	40.000 LB	NATURAL	C	#18 FFEP SH FLRST
1695A 877500	500 FT	20.500 LB	NATURAL	Z	#18 FFEP SH FLRST

Notes:
C = CRATE REEL PUT-UP.
Z = FINAL PUT-UP LENGTH MAY VARY (+ OR -) 10% FOR SPOOLS OR REELS AND(+ OR -) 5% FOR UNREEL CARTONS FROM LENGTH SHOWN.

Revision Number: 7 Revision Date: 02-24-2010

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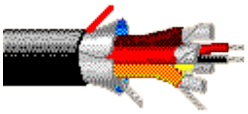
Detailed Specifications & Technical Data

ENGLISH MEASUREMENT VERSION

1815R Multi-Conductor - CMR Rated Cable



For more Information
please call

1-800-Belden1

Description:

22 AWG stranded (7x30) TC conductor, polyolefin insulation, individually shielded with bonded Beldfoil®, numbered/color-coded PVC jackets, jackets and shields are bonded so both strip simultaneously, overall black PVC jacket and nylon rip cord.

Physical Characteristics (Overall)

Conductor

AWG:

# Pairs	AWG	Stranding	Conductor Material	Dia. (in.)
4	22	7x30	TC - Tinned Copper	.030

Insulation

Insulation Material:

Insulation Material	Dia. (in.)
PO - Polyolefin	.050

Inner Shield

Inner Shield Material:

Inner Shield Trade Name	Type	Inner Shield Material	Coverage (%)
Beldfoil®	Tape	Aluminum Foil-Polyester Tape	100

Inner Shield Drain Wire AWG:

AWG
22

Inner Shield Drain Wire Stranding: 7x30

Inner Shield Drain Wire Conductor Material: TC - Tinned Copper

Inner Jacket

Inner Jacket Material:

Inner Jacket Material	Nom. Dia. (in.)
PVC - Polyvinyl Chloride	.133

Outer Shield

Outer Shield Material:

Outer Shield Trade Name	Type	Outer Shield Material	Coverage (%)
Beldfoil®	Tape	Aluminum Foil-Polyester Tape	100

Outer Shield Drain Wire AWG:

AWG	Stranding	Drain Wire Conductor Material
18	19x30	TC - Tinned Copper

Outer Jacket

Outer Jacket Material:

Outer Jacket Material
PVC - Polyvinyl Chloride

Outer Jacket Ripcord: Yes

Overall Cable

Overall Cabling Color Code Chart:

Number	Color
1	Brown

2	Red
3	Orange
4	Yellow

Overall Nominal Diameter: 0.384 in.

Pair

Pair Color Code Chart:

Color
Red & Black

Pair Lay Length & Direction:

Lay Length (in.)	Twists/ft. (twist/ft)
1.500	8.000

Mechanical Characteristics (Overall)

Operating Temperature Range:	-20°C To +60°C
Bulk Cable Weight:	84 lbs/1000 ft.
Max. Recommended Pulling Tension:	109.200 lbs.
Min. Bend Radius (Install)/Minor Axis:	3.900 in.

Applicable Specifications and Agency Compliance (Overall)

Applicable Standards & Environmental Programs

NEC/(UL) Specification:	CMR
CEC/C(UL) Specification:	CMG
EU CE Mark:	Yes
EU Directive 2000/53/EC (ELV):	Yes
EU Directive 2002/95/EC (RoHS):	Yes
EU RoHS Compliance Date (mm/dd/yyyy):	01/01/2004
EU Directive 2002/96/EC (WEEE):	Yes
EU Directive 2003/11/EC (BFR):	Yes
CA Prop 65 (CJ for Wire & Cable):	Yes
MII Order #39 (China RoHS):	Yes

Flame Test

UL Flame Test:	UL1666 Riser
CSA Flame Test:	FT4

Plenum/Non-Plenum

Plenum (Y/N):	No
Plenum Number:	1815P

Electrical Characteristics (Overall)

Nom. Characteristic Impedance:

Impedance (Ohm)
50

Nom. Inductance:

Inductance (µH/ft)
.18

Nom. Capacitance Conductor to Conductor:

Capacitance (pF/ft)
31

Nom. Capacitance Cond. to Other Conductor & Shield:

Capacitance (pF/ft)

56

Nominal Velocity of Propagation:

VP (%)
66

Nom. Conductor DC Resistance:

DCR @ 20°C (Ohm/1000 ft)
14.8

Nominal Outer Shield DC Resistance:

DCR @ 20°C (Ohm/1000 ft)
11.8

Ind. Pair Nominal Shield DC Resistance @ 20 Deg. C: 14.100 Ohm/1000 ft

Max. Operating Voltage - UL:

Voltage
300 V RMS

Max. Recommended Current:

Current
1.45 Amps per conductor @ 25°C

Notes (Overall)

Notes: Pair jackets and shields are bonded so both strip simultaneously with automatic stripping equipment. Beldfoil® provides high reliability with ease of termination.

Related Documents:

No related documents are available for this product

Put Ups and Colors:

Item #	Putup	Ship Weight	Color	Notes	Item Desc
1815R 0101000	1,000 FT	91.000 LB	BLACK	C	4 #22 FS PR PVC FS PVC
1815R 010500	500 FT	45.000 LB	BLACK	C	4 #22 FS PR PVC FS PVC

Notes:
C = CRATE REEL PUT-UP.

Revision Number: 1 Revision Date: 12-19-2011

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Belden believes this product to be in compliance with EU RoHS (Directive 2002/95/EC, 27-Jan-2003). Material manufactured prior to the compliance date may be in stock at Belden facilities and in our Distributor's inventory. The information provided in this Product Disclosure, and the identification of materials listed as reportable or restricted within the Product Disclosure, is correct to the best of Belden's knowledge, information, and belief at the date of its publication. The information provided in this Product Disclosure is designed only as a general guide for the safe handling, storage, and any other operation of the product itself or the one that it becomes a part of. This Product Disclosure is not to be considered a warranty or quality specification. Regulatory information is for guidance purposes only. Product users are responsible for determining the applicability of legislation and regulations based on their individual usage of the product.
Belden declares this product to be in compliance with EU LVD (Low Voltage Directive 73/23/EEC), as amended by directive 93/68/EEC.

BLONDER TONGUE LABORATORIES, INC.

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INSTRUCTION MANUAL

DA-33 Wideband Amplifier

Stock No. 4675A

Description:

The DA-33 features a wide frequency bandwidth of 0.5 MHz to 300 MHz, 36 dB gain and 18 dB of continuously variable gain control range. The DA-33 is ideal as a headend sub-channel return amplifier or on shipboard distribution systems requiring AM, shortwave and communications bands amplification.

Features:

- AM, Shortwave, Sub-Channel Amplification (0.5 MHz to 300 MHz)
- Externally Accessible Test Points Permit In-Service Testing.
- Aluminum Chassis Designed for Superior Heat Dissipation to Insure Component Reliability.
- Exceeds FCC Specs for Both Conducted and Radiated Interference @ Full Output Level.
- External Fuse for Ease of Replacement.
- LED Pilot Light.
- Line Transient Protection.
- Hybrid IC Circuitry for High Output with Low Distortion.
- Exceptional Temperature Stability Range of -20° C to +60° C
- Designed for Critical Applications Requiring High Gain.
- Front Panel Gain Control for Easy Adjustment

651109400E

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The STOP sign symbol is intended to alert you to the presence of REQUIRED operating and maintenance (servicing) instructions that if not followed, may result in product failure or destruction.

The YIELD sign symbol in intended to alert you to the presence of RECOMMENDED operating and maintenance (servicing) instructions.

The LIGHTNING flash symbol is intended to alert you to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be sufficient magnitude to constitute a risk of electrical shock.

**TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT REMOVE COVER FROM THIS UNIT.
NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.**

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE

NOTE TO CATV SYSTEM INSTALLER

This reminder is provided to call the CATV System Installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

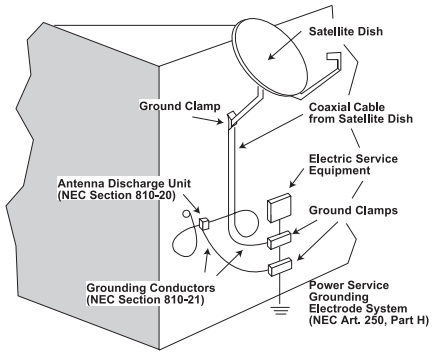
Safety Instructions

YOU SHOULD ALWAYS FOLLOW THESE INSTRUCTIONS TO HELP ENSURE AGAINST INJURY TO YOURSELF AND DAMAGE TO YOUR EQUIPMENT.

- Read all safety and operating instructions before you operate the unit.
- Retain all safety and operating instructions for future reference.
- Heed all warnings on the unit and in the safety and operating instructions.
- Follow all installation, operating, and use instructions.
- Unplug the unit from the AC power outlet before cleaning. Use only a damp cloth for cleaning the exterior of the unit.
- Do not use accessories or attachments not recommended by Blonder Tongue, as they may cause hazards, and will void the warranty.
- Do not operate the unit in high-humidity areas, or expose it to water or moisture.
- Do not place the unit on an unstable cart, stand, tripod, bracket, or table. The unit may fall, causing serious personal injury and damage to the unit. Install the unit only in a mounting rack designed for 19" rack-mounted equipment.

Safety Instructions - continued

- Do not block or cover slots and openings in the unit. These are provided for ventilation and protection from overheating. Never place the unit near or over a radiator or heat register. Do not place the unit in an enclosure such as a cabinet without proper ventilation. Do not mount equipment in the rack space directly above or below the unit.
- Operate the unit using only the type of power source indicated on the marking label. Unplug the unit power cord by gripping the plug, not the cord.
- The unit is equipped with a three-wire ground-type plug. This plug will fit only into a ground-type power outlet. If you are unable to insert the plug into the outlet, contact an electrician to replace the outlet. Do not defeat the safety purpose of the ground-type plug.
- Route power supply cords so that they are not likely to be walked on or pinched by items placed upon or against them. Pay particular attention to cords at plugs, convenience receptacles, and the point where they exit from the unit.
- Be sure that the outdoor components of the antenna system are grounded in accordance with local, federal, and National Electrical Code (NEC) requirements. Pay special attention to NEC Sections 810 and 820. See the example shown in the following diagram:


Satellite Dish
Ground Clamp
Coaxial Cable from Satellite Dish
Electric Service Equipment
Antenna Discharge Unit (NEC Section 810-20)
Ground Clamps
Grounding Conductors (NEC Section 810-21)
Power Service Grounding Electrode System (NEC Art. 250, Part H)

- We strongly recommend using an outlet that contains surge suppression or ground fault protection. For added protection during a lightning storm, or when the unit is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the lines between the unit and the antenna. This will prevent damage caused by lightning or power line surges.
- Do not locate the antenna near overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing the antenna, take extreme care to avoid touching such power lines or circuits, as contact with them can be fatal.
- Do not overload wall outlets or extension cords, as this can result in a risk of fire or electrical shock.
- Never insert objects of any kind into the unit through openings, as the objects may touch dangerous voltage points or short out parts. This could cause fire or electrical shock.
- Do not attempt to service the unit yourself, as opening or removing covers may expose you to dangerous voltage and will void the warranty. Refer all servicing to authorized service personnel.
- Unplug the unit from the wall outlet and refer servicing to authorized service personnel whenever the following occurs:
  - ❑ The power supply cord or plug is damaged;
  - ❑ Liquid has been spilled, or objects have fallen into the unit;
  - ❑ The unit has been exposed to rain or water;
  - ❑ The unit has been dropped or the chassis has been damaged;
  - ❑ The unit exhibits a distinct change in performance.
- When replacement parts are required, ensure that the service technician uses replacement parts specified by Blonder Tongue. Unauthorized substitutions may damage the unit or cause electrical shock or fire, and will void the warranty.
- Upon completion of any service or repair to the unit, ask the service technician to perform safety checks to ensure that the unit is in proper operating condition.

Returning Product for Repair (or Credit)

A Return Material Authorization (RMA) Number is required on all products returned to Blonder Tongue, regardless if the product is being returned for repair or credit. Before returning product, please contact the Blonder Tongue Service Department at 1-800-523-6049, Ext. 4256 or visit our website: **www.blondertongue.com** for further information.

Specifications

RF

Frequency Range: 0.5-300 MHz
Channel Loading: 35 Channels
Flatness: +/- 1 dB
Full Gain: 36 dB
Noise Figure: 5.5 dB
Output Level: +47 dBmV
Composite Triple Beat: -71 dB
Cross Modulation: -55 dB
Hum Modulation: -60 dB
Return Loss
  Input: 16 dB
  Output: 12 dB

General

Power Requirements: 105 to 130 VAC, 60 Hz
Operating Temperature: -40 to +65 degrees C

Mechanical

Dimensions (L x W x H): 11.5” x 7.125” x 3.25”
Weight: 5.75 lbs.

Connectors:

RF In/Out: F Female
In/Output -30 dB Test Points: F Female

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Test Accessories

SA-7U, FAF & FAM

SA-7U

The SA-7U is a versatile slide switch attenuator that operates over the frequency range of 5 to 900 MHz. It provides a total attenuation of 62 dB in 1 dB steps. This variable attenuator is a must for test bench applications.

❍ Specifications

SA-7U

RF

Frequency Range: 5 to 900 MHz

Insertion Loss
(Minimum Attenuation)
- 5 MHz: 0.25 dB
- 220 MHz: 0.50 dB
- 450 MHz: 1.00 dB
- 900 MHz: 1.50 dB

Attenuation
- Total: 62 dB
- Increments: 1, 2, 3, 6, 10, 20, 20 dB

Impedance - All Ports: 75 Ω

Return Loss
- 5 to 300 MHz: 22 dB
- 300 to 800 MHz: 21 dB
- 800 to 900 MHz: 14 dB

General

Dimensions (L x W x H):
- 6.25 x 2.00 x 1.13 in.
- 159 x 51 x 29 mm

Weight: 11 oz., 313 grams

Connectors: "F" Female

FAF

FAM

The FAF and FAM fixed attenuators provide accurate attenuation and excellent match. The FAF series has "F" female connectors at both ends, while the FAM series has one type "F" male and one "F" female connector.

RF	FAF	FAM
Frequency Range (MHz):	5 to 890	5 to 1000
Attenuation Values (dB):	3	1, 2, 3, 4, 5, 6, 7, 10, 20
Impedance - All Ports (Ω):	75	75
Return Loss (dB)		
5 to 50 MHz:	28	21
50 to 300 MHz:	22	21
300 to 470 MHz:	20	21
470 to 890 MHz:	18	17
890 to 1000 MHz:	-	16
General		
Dimensions (L x O.D.):		
in.	2.5 x 0.5	2.0 x 0.5
mm	29 x 13	51 x 13
Weight:		
oz	0.75	0.75
g	21	21
Connectors:	"F" Female	"F" Female "F" Male

Distribution

❍ Ordering Information (Specify Value)

Model	Stock No.	Description
SA-7U	4121	Attenuator, Slide Switch
FAM	4006A	Fixed Attenuator Type "F", Male - Female, Values: 1, 2, 3, 4, 5, 6, 7, 10, 20 dB
FAF	3434	Fixed Attenuator, Type "F", Female - Female Values: 3 dB

Product Specifications

2227K CMRL RG6 QD 1000

Material ID: 4104504/10

RG 6 Type Quad Shield Plenum Video Coaxial Cable, cream jacket, 1000 ft (305 m) reel

Construction Materials

Construction Type	Non-armored
Center Conductor Material	Copper-clad steel wire
Dielectric Material	Foam FEP
Inner Shield (Braid) Coverage	60 %
Inner Shield (Braid) Gauge	34 AWG
Inner Shield (Braid) Material	Aluminum
Inner Shield (Tape) Material	Aluminum/Poly, bonded
Jacket Material	PVDF
Outer Shield (Braid) Coverage	40 %
Outer Shield (Braid) Gauge	34 AWG
Outer Shield (Braid) Material	Aluminum
Outer Shield (Tape) Material	Aluminum/Poly, non-bonded

Dimensions

Cable Length	305 m | 1000 ft
Cable Weight	30.00 lb/kft
Diameter Over Center Conductor	1.0236 mm per 1 strand 0.0403 in per 1 strand
Diameter Over Center Conductor Tolerance	±0.0004 in
Diameter Over Dielectric	4.3180 mm | 0.1700 in
Diameter Over Jacket	6.604 mm | 0.260 in
Diameter Over Jacket Tolerance	±0.004 in
Jacket Thickness	0.406 mm | 0.016 in
Jacket Thickness, minimum spot	0.330 mm | 0.013 in
Diameter Over Inner Shield (Braid)	5.131 mm | 0.202 in
Diameter Over Outer Shield (Braid)	5.893 mm | 0.232 in

Electrical Specifications

Capacitance	50.9 pF/m | 15.5 pF/ft
Characteristic Impedance	75 ohm
Characteristic Impedance Tolerance	±3 ohm
Conductor dc Resistance	28.60 ohms/kft
Dielectric Strength, conductor to shield	2500 Vdc
Jacket Spark Test Voltage	2500 Vac
Nominal Velocity of Propagation (NVP)	84 %
Shield dc Resistance	5.30 ohms/kft
Structural Return Loss	15 dB @ 1000–3000 MHz | 20 dB @ 5–1000 MHz
Structural Return Loss Test Method	100% Swept Tested

Environmental Specifications

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Product Specifications

2227K CMRL RG6 QD 1000 - Material ID: 4104504/10

Environmental Space	Plenum
Flame Test Method	CMP
Operating Temperature	-40 °C to +125 °C (-40 °F to +257 °F)
Safety Standard	cETL | ETL
UL Temperature Rating	125 °C | 257 °F

General Specifications

Application	Video
Cable Type	Series 6
Jacket Color	Cream
Product Number	2227K
Center Conductor Gauge	18 AWG
Center Conductor Type	Solid
Packaging Type	Reel

Mechanical Specifications

Minimum Bend Radius, loaded	20 times
Minimum Bend Radius, unloaded	10 times

Electrical Performance

Frequency	Attenuation (dB/100 m)	Attenuation (dB/100 ft)
1 MHz	1.25	0.38
10 MHz	2.30	0.70
50 MHz	4.85	1.48
100 MHz	6.59	2.01
200 MHz	9.38	2.86
400 MHz	13.87	4.23
700 MHz	19.55	5.96
900 MHz	22.83	6.96
1000 MHz	24.44	7.45
1200 MHz	27.06	8.25
1450 MHz	30.64	9.34
1800 MHz	35.06	10.69
2200 MHz	37.85	11.54
2500 MHz	38.38	11.70
3000 MHz	42.87	13.07

Regulatory Compliance/Certifications

Agency	Classification
RoHS 2002/95/EC	Compliant
ISO 9001:2008	Designed, manufactured and/or distributed under this quality management system

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Product Specifications

2287K CMRL RG11 QD 1000

Material ID: 4103304/10

RG 11 Type Quad Shield Plenum Video Coaxial Cable, cream jacket, 1000 ft (305 m) reel

Construction Materials

Construction Type	Non-armored
Center Conductor Material	Copper-clad steel wire
Dielectric Material	Foam FEP
Inner Shield (Braid) Coverage	60 %
Inner Shield (Braid) Gauge	34 AWG
Inner Shield (Braid) Material	Aluminum
Inner Shield (Tape) Material	Aluminum/Poly
Jacket Material	PVDF
Outer Shield (Braid) Coverage	40 %
Outer Shield (Braid) Gauge	34 AWG
Outer Shield (Braid) Material	Aluminum
Outer Shield (Tape) Material	Aluminum/Poly, non-bonded

Dimensions

Cable Length	305 m | 1000 ft
Cable Weight	63.00 lb/kft
Diameter Over Center Conductor	1.6281 mm per 1 strand 0.0641 in per 1 strand
Diameter Over Dielectric	7.1120 mm | 0.2800 in
Diameter Over Inner Shield (Tape)	7.112 mm | 0.280 in
Diameter Over Jacket	9.449 mm | 0.372 in
Diameter Over Jacket Tolerance	±0.008 in
Jacket Thickness	0.508 mm | 0.020 in
Jacket Thickness, minimum spot	0.406 mm | 0.016 in
Diameter Over Inner Shield (Braid)	7.925 mm | 0.312 in
Diameter Over Outer Shield (Braid)	8.433 mm | 0.332 in

Electrical Specifications

Capacitance	52.5 pF/m | 16.0 pF/ft
Characteristic Impedance	75 ohm
Characteristic Impedance Tolerance	±3 ohm
Conductor dc Resistance	11.00 ohms/kft
Dielectric Strength, conductor to shield	4000 Vdc
Jacket Spark Test Voltage	2500 Vac
Nominal Velocity of Propagation (NVP)	84 %
Shield dc Resistance	3.90 ohms/kft
Structural Return Loss	15 dB @ 1000–3000 MHz | 20 dB @ 5–1000 MHz
Structural Return Loss Test Method	100% Swept Tested

Environmental Specifications

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Product Specifications

2287K CMRL RG11 QD 1000 - Material ID: 4103304/10

Environmental Space	Plenum
Flame Test Method	CMP
Safety Standard	cETL | ETL
UL Temperature Rating	125 °C | 257 °F

General Specifications

Application	Video
Cable Type	Series 11
Jacket Color	Cream
Product Number	2287K
Center Conductor Gauge	14 AWG
Center Conductor Type	Solid
Packaging Type	Reel

Mechanical Specifications

Minimum Bend Radius, loaded	20 times
Minimum Bend Radius, unloaded	10 times

Electrical Performance

Frequency	Attenuation (dB/100 ft)
1 MHz	0.15
10 MHz	0.45
50 MHz	0.90
100 MHz	1.28
200 MHz	1.85
400 MHz	2.75
700 MHz	3.92
900 MHz	4.72
1000 MHz	5.04
1450 MHz	6.67
1800 MHz	7.71
2200 MHz	8.50
3000 MHz	9.88

Regulatory Compliance/Certifications

Agency	Classification
RoHS 2002/95/EC	Compliant
ISO 9001:2008	Designed, manufactured and/or distributed under this quality management system

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QR 320 Series Cables
Product Descriptions

CommScope's patented QR® coaxial cable was developed to meet the increasing demands of tomorrow's broadband networks. QR has the highest reliability and flexibility of any Trunk and Distribution coaxial cable, low RF attenuation and an unprecedented 10 year warranty.

All QR cable products offer tough polyethylene jackets and a standardized, environmentally sealed connector interface engineered for reliability and craft friendliness.

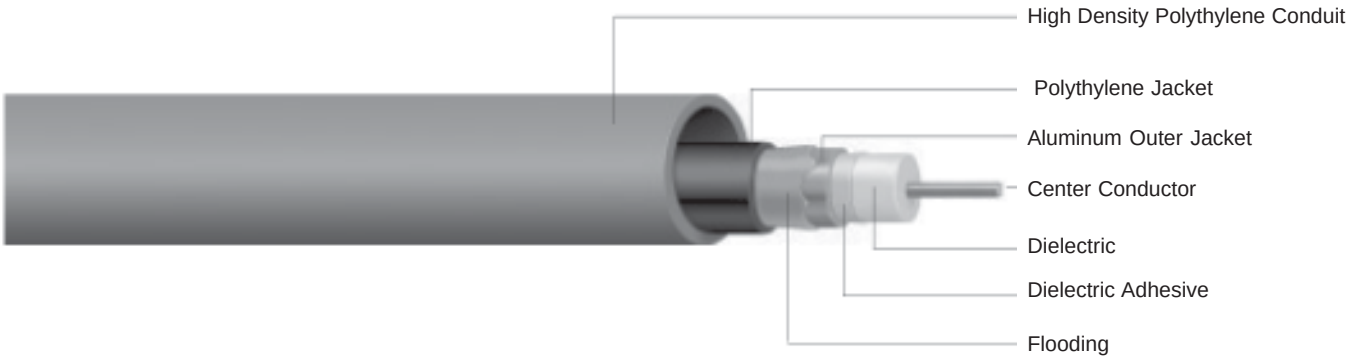
QR 320 is optimized for use in multiple dwelling units (MDU) and feeder applications. QR 320 offers unmatched flexibility, reliability and cost effectiveness.

Standard QR Construction
A precision aluminum strip is formed and continuously RF welded around a high compression micro-cellular foam dielectric core, eliminating RF leakage, and the rigidity common in traditional coaxial products. The shield is fully bonded to the dielectric core, as is the copper clad aluminum center conductor. A tough polyethylene jacket is applied standard, which enhances cable reliability and allows QR's unique connector technology to form an environmental seal.

Aerial Installation				
Part #	**Description**	**Cable Weight**	**Shipping Wteight**	**Standard Length**
QR 320 JCA	Offers all of QR's standard construction features	47 lbs/kft (70 kg/km)	63 lbs/kft (94 kg/km)	3700 ft (1128m)
QR 320 JCAM109	Has an integrated figure 8 galvanized solid steel messenger for self-supporting applications	88 lbs/kft (131 kg/km)	107 lbs/kft (159 kg/km)	3700 ft (1128m)
QR 320 JCAM083 EHS (also available)		73 lbs/kft (109 kg/km)	90 lbs/kft (134 kg/km)	3700 ft (1128m)
Underground Installation				
Part #	**Description**	**Cable Weight**	**Shipping Wteight**	**Standard Length**
QR 320 JCASS	Features CommScope's Migra-Heal floodant that seas jacket damage to inhibit corrosion	47 lbs/kft (70 kg/km)	63 lbs/kft (94 kg/km)	3700 ft (1128m)
Indoor/Riser Installation				
Part #	**Description**	**Cable Weight**	**Shipping Wteight**	**Standard Length**
QR 320 JCAR	has a flame-retardant polyethylene jacket that meets NEC's CATVR rating	56 lbs/kft (83 kg/km)	72 lbs/kft (112 kg/km)	3700 ft (1128m)

CommScope®

QR (JCASS)



CommScope's patented QR® coaxial cable was developed to meet the increasing demands of tomorrow's broadband networks. QR has the highest reliability and flexibility of any coaxial cable, low RF attenuation and an unprecedented 10-year warranty. QR coaxial cable offers lower attenuation than larger traditional products, with unmatched flexibility, reliability and cost effectiveness. CommScope offers four standard sizes (540, 715, 860 and 1125) of QR Cable-InConduit, each optimized for a specific use.

Size	Wall Thickness	Wall Rating	QR 540 JCASS			QR 715 JCASS		
			Nominal Length (ft)	Reel Size (FDT) (in)	Weight* lbs/ft	Nominal Length (ft)	Reel Size (FDT) (in)	Weight* lbs/ft
1"	SDR 13.5	Medium	3,700	63 x 30 x 40	261	NA	NA	NA
	SDR 11	Heavy	3,700	63 x 30 x 40	296	NA	NA	NA
	SCH 40	X-Heavy	3,700	63 x 30 x 40	311	NA	NA	NA
1 1/4"	SDR 13.5	Medium	3,700	80 x 40 x 38	357	3,000	68 x 30 x 40	409
	SCH 40	Heavy	3,700	80 x 40 x 38	387	3,000	68 x 30 x 40	439
	SDR 11	X-Heavy	3,700	80 x 40 x 38	412	3,000	68 x 30 x 40	464
1 1/2"	SDR 13.5	Medium	3,700	90 x 42 x 40	436	3,000	90 x 42 x 40	488
	SCH 40	Heavy	3,700	90 x 42 x 40	445	3,000	90 x 42 x 40	497
	SDR 11	X-Heavy	3,700	90 x 42 x 40	508	3,000	90 x 42 x 40	560
2"	SCH 40	Medium	3,700	102 x 48 x 42	564	3,000	102 x 48 x 42	616
	SDR 13.5	Heavy	3,700	102 x 48 x 42	624	3,000	102 x 48 x 42	676
	SDR 11	X-Heavy	3,700	102 x 48 x 42	732	3,000	102 x 48 x 42	784
			QR 860 JCASS			QR 1125 JCASS		
1"	SDR 13.5	Medium	NA	NA	NA	NA	NA	NA
	SDR 11	Heavy	NA	NA	NA	NA	NA	NA
	SCH 40	X-Heavy	NA	NA	NA	NA	NA	NA
1 1/4"	SDR 13.5	Medium	NA	NA	NA	NA	NA	NA
	SCH 40	Heavy	NA	NA	NA	NA	NA	NA
	SDR 11	X-Heavy	NA	NA	NA	NA	NA	NA
11/2"	SDR 13.5	Medium	2700	80 x 40 x 38	558	NA	NA	NA
	SCH 40	Heavy	2700	80 x 40 x 38	567	NA	NA	NA
	SDR 11	X-Heavy	2700	80 x 40 x 38	630	NA	NA	NA
2"	SCH 40	Medium	2700	102 x 48 x 42	686	3000	102 x 48 x 42	815
	SDR 13.5	Heavy	2700	102 x 48 x 42	746	3000	102 x 48 x 42	875
	SDR 11	X-Heavy	2700	102 x 48 x 42	854	3000	102 x 48 x 42	983

CommScope®

Trunk & Distribution Cable Catalog Numbering Key

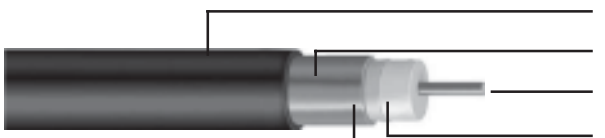
QR 540 J CA SS - T

- **540** — Size *(diameter over shield)*
  - 320
  - 540
  - 715
  - 860
  - 1125
- **J** — PE Jacket
- **CA** — Copper Aluminum
- **SS** — Floodant
- **T** — Tracer

Suffix
- J - Jacketed
- CA - Copper Aluminum
- SS - Miagra-Heal Flooding Compound
- T - Tracer
- M - Messenger
- EHS - Extra High Strength

QR Aerial Construction Configurations

QR JCA



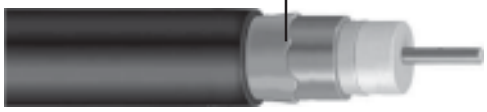
- Polyethylene Jacket
- Aluminum Outer Conductor
- Center Conductor
- Dielectric
- Dielectric Adhesive

QR JCAM (Solid Messenger)

- Integrated Figure 8 Solid Galvanized Steel Messenger

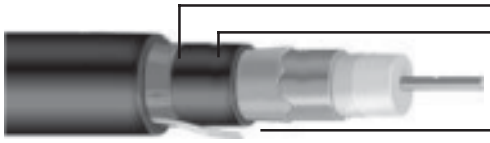
QR Underground Construction Configurations

QR JCASS



- Migra-Heal Flooding Compound

QR 2J (MA) CASS



- Polypropylene Tape
- Inner Polythylene Jacket
- Ripcord

QR JACASS

- Bonded Corrugated Chrome Plated Steel Armor

CommScope®

QR 320 Series Cables
Product Specifications

Physical Dimensions		
Component	**Inches**	**mm**
Nominal Center Conductor Diameter	0.071	1.80
Nominal Diameter Over Dielectric	0.294	7.47
Nominal Diameter Over Outer Conductor	0.320	8.13
Nominal Outer Conductor Thickness	0.013	0.34
Nominal Diameter Over jacket	0.395	10.03
Nominal Jacket Wall Thickness	0.0375	0.89
Messenger Version		
Diameter of Steel Messenger	0.109	2.77
	0.083	2.11

Mechanical Characteristics			
Minimum Bending Radius		2.0 in	50.8 mm
Maximum Pulling Tension		120 lbs	54.5 kgf
Minimum Breaking Strength of Messenger	(109)	1,800 lbs	816 kg_f
	(.083)	1,000 lbs	453 kg_f

Electrical Characteristics		
Capacitance	15.3 ± 1.0 pf/ft	50 ± 3.0 nf/ft
Impedance	75 ± 3 ohms	
Velocity of Propagation	87%	

Maximum D.C. Resistance @ 68°F (20°C)		
Inner Conductor	3.2/8 ohms/1000ft	10.76 ohms/km
Outer Conductor	0.99 ohms/1000ft.	3.25 ohms/km
Loop	4.27 ohms/1000ft	14.01 ohms/km

Attenuation @ 68°F (20°C)		
Frequency (Mhz)	**(db/100 ft) Max**	**(db/100 m) Max.**
5	0.24	0.79
30	0.62	2.03
45	0.76	2.49
50	0.80	2.62
55	0.84	2.76
83	1.07	3.51
108	1.22	4.00
150	1.45	4.76
181	1.60	5.25
193	1.65	5.41
211	1.73	5.68
220	1.76	5.77
250	1.86	6.10
270	1.94	6.37
300	2.04	6.69
325	2.17	7.12
350	2.25	7.38
375	2.30	7.55
400	2.38	7.81
425	2.45	8.04
450	2.52	8.27
500	2.72	8.92
550	2.85	9.35
600	2.98	9.78
750	3.34	10.96
865	3.62	11.87
1000	3.89	12.76

CommScope®

Product Specifications

COMMSCOPE®

F1160BVR

Material ID: 7736703

75 Ohm Coaxial Drop Cable, Series 11, black flame retardant PVC jacket

Construction Materials

Center Conductor Material	Copper-clad steel
Dielectric Material	Foam PE
Inner Shield (Braid) Coverage	60 %
Inner Shield (Braid) Gauge	34 AWG
Inner Shield (Braid) Material	Aluminum
Inner Shield (Tape) Material	Aluminum/Polymer/Aluminum (APA) bonded
Jacket Material	Fire retardant PVC

Dimensions

Diameter Over Center Conductor, nominal	1.626 mm | 0.064 in
Diameter Over Dielectric, nominal	7.112 mm | 0.280 in
Diameter Over Inner Shield (Tape), nominal	7.290 mm | 0.287 in
Diameter Over Jacket, nominal	10.160 mm | 0.400 in
Jacket Thickness, nominal	1.0668 mm | 0.0420 in
Shipping Weight	59.00 lb/kft

Electrical Specifications

dc Resistance, Inner Conductor, nominal	12.50 ohms/kft
dc Resistance, Outer Conductor, nominal	7.00 ohms/kft
dc Resistance, Loop, nominal	19.50 ohms/kft
dc Resistance Note	Nominal values based on a standard condition of 20 °C (68 °F)
Capacitance	53.1 pF/m | 16.2 pF/ft
Characteristic Impedance	75 ohm
Characteristic Impedance Tolerance	±3 ohm
Nominal Velocity of Propagation (NVP)	85 %

Environmental Specifications

Environmental Space	Indoor | Riser
Flame Test Listing	CATVR | NEC Article 820

General Specifications

Cable Type	Series 11
Packaging Type	Reel
Shield Construction Type	Dual shield
Center Conductor Gauge	14 AWG
Center Conductor Type	Solid
Jacket Color	Black
Jacket Marking	Feet
Warranty	One year

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Product Specifications

F1160BVR - Material ID: 7736703

Electrical Performance

Frequency	Attenuation (dB/100 m)	Attenuation (dB/100 ft)
5 MHz	1.25	0.38
55 MHz	3.15	0.96
83 MHz	3.87	1.18
187 MHz	5.74	1.75
211 MHz	6.23	1.90
250 MHz	6.72	2.05
300 MHz	7.38	2.25
350 MHz	7.94	2.42
400 MHz	8.53	2.60
450 MHz	9.02	2.75
500 MHz	9.51	2.90
550 MHz	9.97	3.04
600 MHz	10.43	3.18
750 MHz	11.97	3.65
865 MHz	13.05	3.98
1000 MHz	14.27	4.35

** Attenuation listed represents maximum values at standard condition of 20 °C (68 °F)*

Regulatory Compliance/Certifications

Agency	Classification
RoHS 2002/95/EC	Compliant
ISO 9001:2008	Designed, manufactured and/or distributed under this quality management system

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Product Specifications

COMMSCOPE®

F11SSV

Material ID: 4564604

75 Ohm Coaxial Drop Cable, Series 11, black PVC jacket

Construction Materials

Center Conductor Material	Copper-clad steel
Dielectric Material	Foam PE
Inner Shield (Braid) Coverage	60 %
Inner Shield (Braid) Gauge	34 AWG
Inner Shield (Braid) Material	Aluminum
Inner Shield (Tape) Material	Aluminum/Polymer/Aluminum (APA) bonded
Jacket Material	PVC
Outer Shield (Braid) Coverage	40 %
Outer Shield (Braid) Gauge	34 AWG
Outer Shield (Braid) Material	Aluminum
Outer Shield (Tape) Material	Aluminum/Polymer/Aluminum (APA)

Dimensions

Diameter Over Center Conductor, nominal	1.626 mm | 0.064 in
Diameter Over Dielectric, nominal	7.112 mm | 0.280 in
Diameter Over Inner Shield (Tape), nominal	7.290 mm | 0.287 in
Diameter Over Jacket, nominal	10.338 mm | 0.407 in
Jacket Thickness, nominal	0.9398 mm | 0.0370 in
Shipping Weight	72.00 lb/kft

Electrical Specifications

dc Resistance, Inner Conductor, nominal	12.50 ohms/kft
dc Resistance, Outer Conductor, nominal	3.70 ohms/kft
dc Resistance, Loop, nominal	16.20 ohms/kft
dc Resistance Note	Nominal values based on a standard condition of 20 °C (68 °F)
Capacitance	53.1 pF/m | 16.2 pF/ft
Characteristic Impedance	75 ohm
Characteristic Impedance Tolerance	±3 ohm
Nominal Velocity of Propagation (NVP)	85 %

Environmental Specifications

Environmental Space	Indoor

General Specifications

Cable Type	Series 11
Packaging Type	Reel
Shield Construction Type	Quad shield
Center Conductor Gauge	14 AWG
Center Conductor Type	Solid
Jacket Color	Black

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Product Specifications

F11SSV - Material ID: 4564604

Jacket Marking	Feet
Warranty	One year

Electrical Performance

Frequency	Attenuation (dB/100 m)	Attenuation (dB/100 ft)
5 MHz	1.25	0.38
55 MHz	3.15	0.96
83 MHz	3.87	1.18
187 MHz	5.74	1.75
211 MHz	6.23	1.90
250 MHz	6.72	2.05
300 MHz	7.38	2.25
350 MHz	7.94	2.42
400 MHz	8.53	2.60
450 MHz	9.02	2.75
500 MHz	9.51	2.90
550 MHz	9.97	3.04
600 MHz	10.43	3.18
750 MHz	11.97	3.65
865 MHz	13.05	3.98
1000 MHz	14.27	4.35

** Attenuation listed represents maximum values at standard condition of 20 °C (68 °F)*

Regulatory Compliance/Certifications

Agency	Classification
RoHS 2002/95/EC	Compliant
ISO 9001:2008	Designed, manufactured and/or distributed under this quality management system

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F59 HEC-2 VV HEADEND CABLE
75 Ohm Coaxial Cable
Drop Cable

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Hickory, NC 28603
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(828) 324-2200
Fax: (828) 324-3400
Int'l Fax: (828) 323-4989
www.commscope.com
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ISO 9001 REGISTERED

PRODUCT DESCRIPTION:

BONDED LAMINATED ALUMINUM TAPE, 95% BRAID,
LAMINATED ALUMINUM TAPE, 95% BRAID,
FLAME RETARDANT PVC JACKET

CENTER CONDUCTOR:

20 AWG SILVER PLATED COPPER COVERED STEEL
NOMINAL DIAMETER: 0.032" (0.81 mm)

DIELECTRIC:

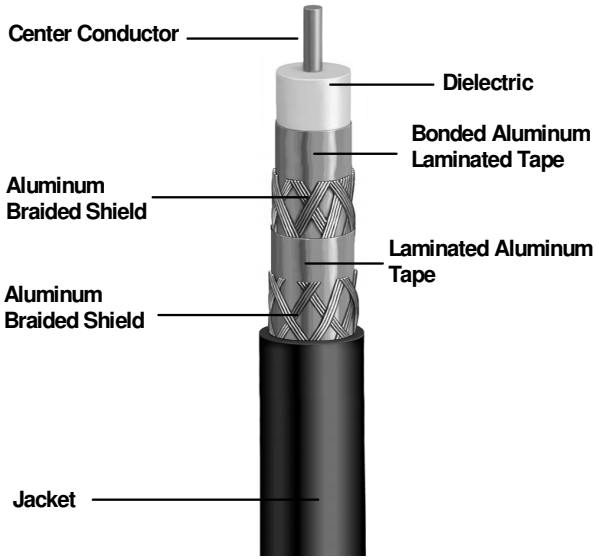
GAS EXPANDED POLYETHYLENE
NOMINAL DIAMETER OVER DIELECTRIC: 0.144" (3.66 mm)

SHIELD:

1ST SHIELD: ALUMINUM LAMINATED TAPE BONDED TO THE DIELECTRIC
NOMINAL DIAMETER OVER TAPE: 0.151" (3.84 mm)
2nd SHIELD: 34 AWG ALUMINUM BRAID WIRE
95% COVERAGE
3RD SHIELD: ALUMINUM LAMINATED TAPE
4TH SHIELD: 34 AWG ALUMINUM BRAID WIRE
95% COVERAGE

JACKET:

FLAME RETARDANT PVC JACKET (AVAILABLE IN 12 COLORS)
NOMINAL DIAMETER OVER JACKET: 0.270" (6.86 mm)



ELECTRICAL PROPERTIES:

IMPEDANCE: 75 +/- 3 Ohms
VELOCITY OF PROPAGATION: 85% NOMINAL
ATTENUATION @ 68°F (20°C):

@ Frequency MHz	dB/100 ft. (MAX.)	dB/100 meters (MAX.)
5 MHz	0.86 dB	2.82 dB
55 MHz	2.05 dB	6.73 dB
83 MHz	2.45 dB	8.04 dB
187 MHz	3.60 dB	11.81 dB
211 MHz	3.80 dB	12.47 dB
250 MHz	4.10 dB	13.45 dB
300 MHz	4.45 dB	14.60 dB
350 MHz	4.80 dB	15.75 dB
400 MHz	5.10 dB	16.73 dB
450 MHz	5.40 dB	17.72 dB
500 MHz	5.70 dB	18.70 dB
550 MHz	5.95 dB	19.52 dB
600 MHz	6.20 dB	20.34 dB
750 MHz	6.97 dB	22.87 dB
865 MHz	7.52 dB	24.67 dB
1000 MHz	8.12 dB	26.64 dB

RoHS COMPLIANT

Drawing not to scale.
Specifications subject to change.
Revision: 08/26/08

Product Specifications

F6SSV

Material ID: 4561004

75 Ohm Coaxial Drop Cable, Series 6, black PVC jacket

Construction Materials

Center Conductor Material	Copper-clad steel
Dielectric Material	Foam PE
Inner Shield (Braid) Coverage	60 %
Inner Shield (Braid) Gauge	34 AWG
Inner Shield (Braid) Material	Aluminum
Inner Shield (Tape) Material	Aluminum/Polymer/Aluminum (APA) bonded
Jacket Material	PE
Outer Shield (Braid) Coverage	40 %
Outer Shield (Braid) Gauge	34 AWG
Outer Shield (Braid) Material	Aluminum
Outer Shield (Tape) Material	Aluminum/Polymer/Aluminum (APA)

Dimensions

Diameter Over Center Conductor, nominal	1.016 mm | 0.040 in
Diameter Over Dielectric, nominal	4.572 mm | 0.180 in
Diameter Over Inner Shield (Tape), nominal	4.750 mm | 0.187 in
Diameter Over Jacket, nominal	7.544 mm | 0.297 in
Jacket Thickness, nominal	0.7620 mm | 0.0300 in
Shipping Weight	39.00 lb/kft

Electrical Specifications

dc Resistance, Inner Conductor, nominal	30.50 ohms/kft
dc Resistance, Outer Conductor, nominal	5.20 ohms/kft
dc Resistance, Loop, nominal	35.70 ohms/kft
dc Resistance Note	Nominal values based on a standard condition of 20 °C (68 °F)
Capacitance	53.1 pF/m | 16.2 pF/ft
Characteristic Impedance	75 ohm
Characteristic Impedance Tolerance	±3 ohm
Nominal Velocity of Propagation (NVP)	85 %

Environmental Specifications

Environmental Space	Buried

General Specifications

Cable Type	Series 6
Packaging Type	Reel
Shield Construction Type	Quad shield
Center Conductor Gauge	18 AWG
Center Conductor Type	Solid
Jacket Color	Black

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Product Specifications

F6SSV - Material ID: 4561004

Jacket Marking	Feet
Warranty	One year

Electrical Performance

Frequency	Attenuation (dB/100 m)	Attenuation (dB/100 ft)
5 MHz	1.90	0.58
55 MHz	5.25	1.60
83 MHz	6.40	1.95
187 MHz	9.35	2.85
211 MHz	10.00	3.05
250 MHz	10.82	3.30
300 MHz	11.64	3.55
350 MHz	12.63	3.85
400 MHz	13.61	4.15
450 MHz	14.43	4.40
500 MHz	15.29	4.66
550 MHz	16.08	4.90
600 MHz	16.73	5.10
750 MHz	18.54	5.65
865 MHz	20.01	6.10
1000 MHz	21.49	6.55

** Attenuation listed represents maximum values at standard condition of 20 °C (68 °F)*

Regulatory Compliance/Certifications

Agency	Classification
RoHS 2002/95/EC	Compliant
ISO 9001:2008	Designed, manufactured and/or distributed under this quality management system

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DQT1000 Digital to QAM Transcoder
MQM1000 Multiplexing QAM Modulator

Instruction Manual

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DRAKE is a registered trademark of R.L. Drake LLC

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2 Caution Statements

WARNING: TO PREVENT FIRE OR ELECTRICAL SHOCK DO NOT EXPOSE TO RAIN OR MOISTURE

CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER
NO USER-SERVICEABLE PARTS INSIDE
REFER SERVICING TO QUALIFIED PERSONNEL

A product and cart combination should be moved with care. Quick stops, excessive force and uneven surfaces may cause the product and cart combination to overturn.

The lightning flash with arrow head symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE.
DO NOT OPEN THE CABINET, REFER SERVICING TO QUALIFIED PERSONNEL ONLY.

CAUTION: TO PREVENT ELECTRIC SHOCK, DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

ATTENTION: POUR PREVENIR LES CHOCS ELECTRIQUES, NE PAS UTILISER CETTE FICHE POLARISEE AVEC UN PROLONGATEUR, UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ETRE INSEREES A FOND SANS EN LAISSER AUCUNE PARTIE A DECOUVERT.

The DQT1000 and MQM1000 have been designed to comply with, and tested to confirm compliance to, the following satety regulations:

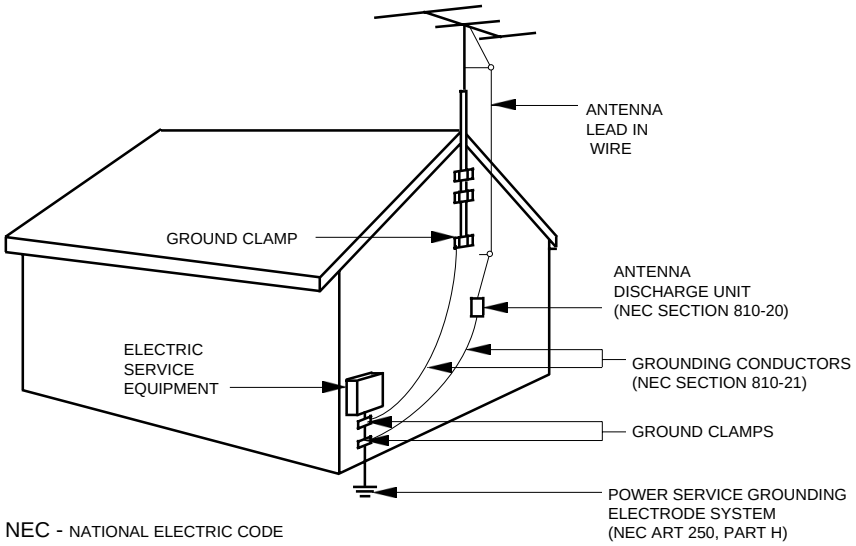
ANSI/UL 60065, 7th Edition, dated 06/30/2004, rev. 11/20/2006.

CAN/CSA - C22.2 No. 60065:03 (2006).

1. Read Instructions—All the safety and operating instructions should be read before the product is operated.
2. Retain Instructions—The safety and operating instructions should be retained for future reference.
3. Heed Warnings—All warnings on the product and in the operating instructions should be adhered to.
4. Follow Instructions—All operating and use instructions should be followed.
5. Cleaning—Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleansers. Use a damp cloth for cleaning.
6. Attachments—Do not use attachments that are not recommended by the product manufacturer as they may cause hazards.
7. Water and Moisture—Do not use this product near water—for example, near a bathtub, wash bowl, kitchen sink or laundry tub; in a wet basement; or near a swimming pool; and the like.
8. Accessories—Do not place this product on an unstable cart, stand, tripod, bracket, or table. The product may fall, causing serious injury to a child or adult, and serious damage to the product. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer, or sold with the product. Any mounting of the product should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer.
9. A product and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the product and cart combination to overturn.
10. Ventilation—Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the product and to protect it from overheating, and these openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or similar surface. This product should not be placed in a built-in installation such as bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.
11. Power Sources—This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supplied to your home, consult your product dealer or local power company. For products intended to operate from battery power, or other sources, refer to the operating instructions.
12. Grounding or Polarization—This product may be equipped with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug. Alternate Warnings—If this product is equipped with a three-wire grounding-type plug, a plug having a third (grounding) pin, the plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding-type plug.
12 a. Mise à la terre ou Polarisation—Cet appareil est équipé avec un cordon d'alimentation à trois fils. Il est a brancher sur une prise ayant un connecteur a la terre. Assurez-vous que la connection a la terre ne manque pas.
13. Power-Cord Protection—Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the product.
14. Outdoor Antenna Grounding—If an outside antenna or cable system is connected to the product, be sure the antenna or cable system is grounded so as to provide some protection against voltage surges and built-up static charges. Article 810 of the National Electrical Code, ANSI/NFPA 70, provides information with regard to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See Figure A.
15. Lightning—For added protection for this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the product due to lightning and power-line surges.
16. Power Lines—An outside antenna system should not be located in the vicinity of overhead power lines, other electric light or power circuits, where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits as contact with them may be fatal.
17. Overloading—Do not overload wall outlets, extension cords, or integral convenience receptacles as this can result in a risk of fire or electric shock.
18. Object and Liquid Entry—Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.
19. Servicing—Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
20. Damage Requiring Service—Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:
a. When the power-supply cord or plug is damaged,
b. If liquid has been spilled, or objects have fallen into the product,
c. If the product has been exposed to rain or water,
d. If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to its normal operation,
e. If the product has been dropped or damaged in any way, and
f. When the product exhibits a distinct change in performance—this indicates a need for service.
21. Replacement Parts—When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutes may result in fire, electric shock or other hazards.
22. Safety Check—Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.
23. Wall or Ceiling Mounting—The product should be mounted to a wall or ceiling only as recommended by the manufacturer.
24. Heat—The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.

NOTE TO CATV SYSTEM INSTALLERS:
THIS REMINDER IS PROVIDED TO CALL THE CATV SYSTEM INSTALLER'S ATTENTION TO ARTICLE 820 - 40 OF THE NEC THAT PROVIDES GUIDELINES FOR PROPER GROUNDING AND, IN PARTICULAR, SPECIFIES THAT THE CABLE GROUND SHALL BE CONNECTED TO THE GROUNDING SYSTEM OF THE BUILDING, AS CLOSE TO THE POINT OF CABLE ENTRY AS PRACTICAL.

Figure A
Example of antenna grounding as per National Electrical Code, ANSI/NFPA 70



NEC - NATIONAL ELECTRIC CODE

4 Table of Contents / Specifications

TABLE OF CONTENTS

2 Caution Statements
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5 General Description
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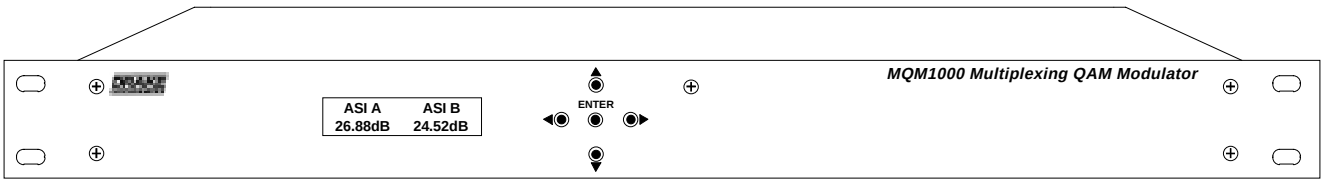
7 Rear Panel Controls and Connections
8 Setup and Programming
12 Operation / Additional Features
13 Service / If You Need To Call For Help
14 Warranty

SPECIFICATIONS

DEMODULATOR (S)	
DQT1000 ONLY:	Not present - MQM1000
Input Frequency Range:	54 to 864 MHz.
Channel Plans (Menu selectable):	Std. CATV, HRC, IRC, or Broadcast
Input Channel Bandwidth:	6 MHz.
Input RF Level Range:	-28 dBmV to +30 dBmV
Minimum Input Level per Mode:	8VSB: -28dBmV, 16VSB: -25dBmV, 64QAM: -20dBmV, 256QAM: -15 dBmV.
Maximum Input Power (sum of all channels):	Not to exceed -16 dBm.
Input Impedance:	75 Ohms with Return Loss typically 8 dB.
Image rejection:	40 dB.
Adjacent Channel Rejection:	60 dB
Noise Figure:	Less than 12 dB.
Demodulation Modes:	8VSB,16VSB - ATSC 16QAM, 32QAM, 64QAM, 128QAM, or 256QAM - ITUA 64QAM, 256QAM, - ITUB
Symbol Rates:	Commonly used presets and user programmable.
Equalizer Span:	-6 µS to +40 µS.
ASI INPUTS	
MQM1000-Two Inputs **DQT1000 ASI Option:**	270 Mbps with desired transport stream of 10.76 MS/s, ATSC, 19.37 Mbps
NULL PACKET PROCESSING:	DQT1000 and MQM1000 (fixed output clock mode)
QAM MODULATOR	
Modulation Modes:	16QAM, 32QAM, 64QAM, 128QAM, 256QAM, 512QAM or 1024QAM. *(See page 9 for all available combinations of QAM modes and FEC.)*
Symbol Rate:	1 Ms/s to 7 Ms/s.
FEC:	ITUA (DVB) or ITUB (DigiCipher II).
I/Q Phase Error:	Less than 1 degree.
Carrier Suppression:	45 dB.
Channel Amplitude Error:	Less than 1 dB.
MER:	Greater than 38 dB with blind equalizer.
ANALOG EAS IF INPUT	
Operating Input Level:	+30 dBmV ±5 dB at 45.75 MHz, 75 Ohms
Auto Switching Level:	+ 20 dBmV minimum.
UPCONVERTER RF OUTPUT	
Output Frequency Range:	54 MHz to 1002 MHz.
Channel Plan:	Std. CATV, HRC, IRC, or Broadcast
FCC offsets:	Automatic, +12.5 or +25 kHz
Frequency Stability:	± 5 ppm.
Maximum Output Level:	+ 61 dBmV minimum, adjustable downward.
Minimum Output Level:	+ 45 dBmV.
Output Level Accuracy:	± 1 dB.
Output Impedance:	75 Ohms with return loss better than 14 dB (within output filter passband).
Spurious Outputs:	-60 dBc from 40 MHz to 1000 MHz.
Broadband Noise:	Less than -12 dBmV (6 MHz BW @ ±12 MHz).
Phase Noise:	-101 dBc @ 10 kHz offset
RS232 CONTROL	
Data Link:	2400, 4800, 9600, or 19,200 baud interface via serial cable.
RS232 Input:	DB-9 connector for connection to modem or PC.
RS232 Output:	DB-9 connector for connection to addtional transcoders.
GENERAL	
Power:	90 - 132 VAC/ 60 Hz, 40 W maximum.
Weight:	7 pounds
Size:	19” W x 1.75” H x 11.5” D.
Operating Temperature:	0 degrees C to + 50 degrees C



GENERAL DESCRIPTION

The R.L. Drake model DQT1000 is a professional quality, digital headend transcoder that receives one or two ATSC, or ATSC compatible MPEG2, 8VSB or QAM signals from an off air antenna or from a CATV source. It demodulates the signals to recover the MPEG2 transport stream(s), multiplexes the MPEG2 transport streams from DEMOD A and either the second RF input (DEMOD B) or the ASI input if used, and modulates the resulting combined stream using QAM modulation followed by a built in upconverter for output to a CATV system.

The model MQM1000 does not contain a RF demodulator but instead accepts one or two ATSC multiprogram transport streams via two BNC, ASI inputs. When two streams are input, the MQM1000 then multiplexes the two ATSC streams in the same manner as the DQT1000.

The DQT1000 and MQM1000 provide essentially the same function as the popular DQT860 and MQM860 units. In addition, the '861' and '1000' models provide a program filter function (a new Select Program menu) and offer improved upconverter specs with phase noise reduced to a level that is compatible with QAM modes up though 1024QAM.
The '1000' models provide the same features as the '861' models except that the upconverter has been upgraded to allow operation up to 1000 MHz on the output side. The new '1000' models can be used with the Drake Digital Headend Remote Control Software, version 2.6 or later, for remote controlling or remote monitoring of operating parameters. This program can also be used to download new firmware into the unit if that ever becomes desirable.

The DQT1000 and MQM1000 operate in a fixed output clock mode and process null packets when required to maintain the set fixed clock rate. PCR correction is included.

DIGITAL CHANNEL PROCESSING

The single input DQT1000, available by special order, is ideal for digital 'channel processing' applications where a single digital video signal is received, error corrected, clocked at a user determined fixed rate and remodulated on the same or another RF channel. Applications include cleaning up a low MER QAM signal received from a CATV source or fiber link receiver, or shifting the RF frequency of a QAM modulated signal. It may be used to convert one off-air ATSC 8VSB signal to a QAM output with rate adjustment. Used in the processor mode with only one input, the DQT1000 can process ATSC, DVB, or DigiCipher II compliant MPEG2 inputs that are either VSB or QAM modulated. No multiplexing or altering of any MPEG tables is performed in this mode.

Used in the non multiplexing mode, the data rate of the incoming signal can be any rate that falls within the specification range. The output rate can be set to any fixed output rate (equal to or faster than the input rate).

MULTIPLEXING TWO ATSC TRANSPORT STREAMS

With the second RF input/tuner/demodulator (Demod B), the DQT1000 can accept two 19.4 Mbps ATSC signals (either with 8VSB modulation or QAM modulation) and multiplex the transport streams to obtain a 38.8 Mbps 256QAM output. Thus two ATSC inputs can be output on a single 6 MHz bandwidth 256 QAM channel.

Another way of combining two ATSC 19.4 Mbps streams is to receive the first stream using the 8VSB input (Demod A) and input the second stream, if available in ASI format, to the optional ASI input on The DQT1000. Again the two combined ATSC signals will be modulated at 256QAM in a 6 MHz wide channel.

If it is desired to provide both ATSC signals from ASI sources, the model MQM1000 can be used.

When the DQT1000 or MQM1000 multiplexes two ATSC inputs to produce a 38.8 Mbps output, no loss of picture or sound packets occurs. There is no added compression of the video or audio streams. Only the necessary control packets are rewritten to prevent duplication of MPEG2 program numbers and major and minor channel number assignments in the tables.

PROGRAM FILTERING

A 'Select Program' function is provided to allow the operator to select which of the MPEG programs present on the A and B input streams are to be included in the output multiplex.

PSIP OPTIONS

When operating in the multiplex mode, the DQT1000 or MQM1000 can be set to process PSIP information from both sources and rewrite tables containing combined PSIP information, or in cases where the off-air broadcast channels may not be transmitting some or all of the tables, it can be set to ignore and discard the PSIP tables completely, or it can be set to generate MGT and VCT tables without EIT tables. Null packet processing is applied as necessary to keep the output data rate at the desired setting. PCR correction is performed when necessary.

OUTPUT

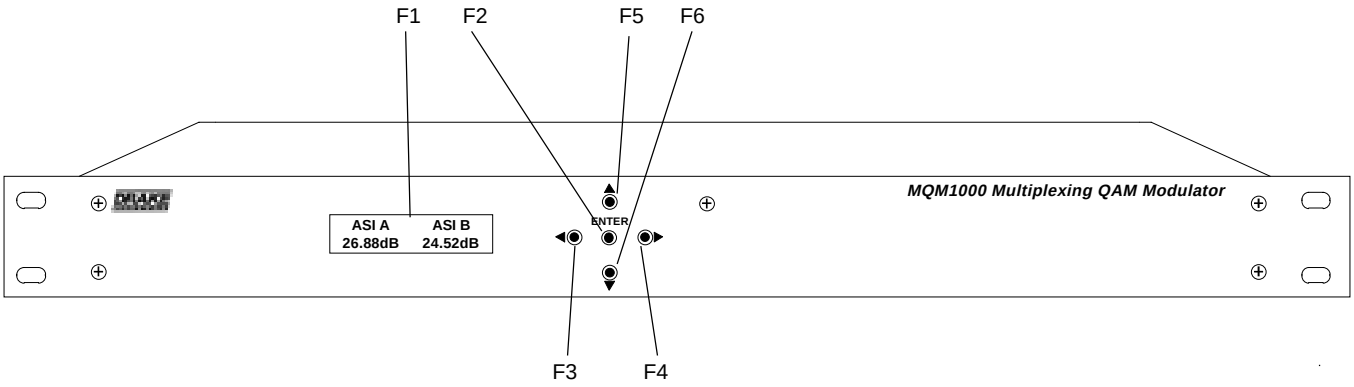
The RF output is always QAM regardless of whether the input is VSB or QAM and the built-in agile upconverter provides 61 dBmV output.

6 Installation & Mounting / Front Panel Controls

INSTALLATION AND MOUNTING NOTES

This equipment is designed to be installed in a standard 19" rack. All models have a built in fan to provide air movement through the unit. When the unit is mounted above or below other rack mounted equipment, a 1U space should be left between the unit and the other equipment to allow ambient air flow between the units.

When connecting an incoming RF signal source to the DQT1000 DEMOD A and DEMOD B (if installed) inputs, note that the antenna or CATV source must be connected to both the DEMOD A and DEMOD B input connectors. These inputs are kept separate in case the inputs need to come from different antennas or one antenna and one CATV source. Connect the AC line cord to an appropriate source of 120 volt, 50/60 Hz AC power. The DQT1000 is always on once the AC power cord is connected to its power source.



F1, LCD Display – This display presents the selected menu screen and the parameter settings. The backlight in the display is on when power is applied.

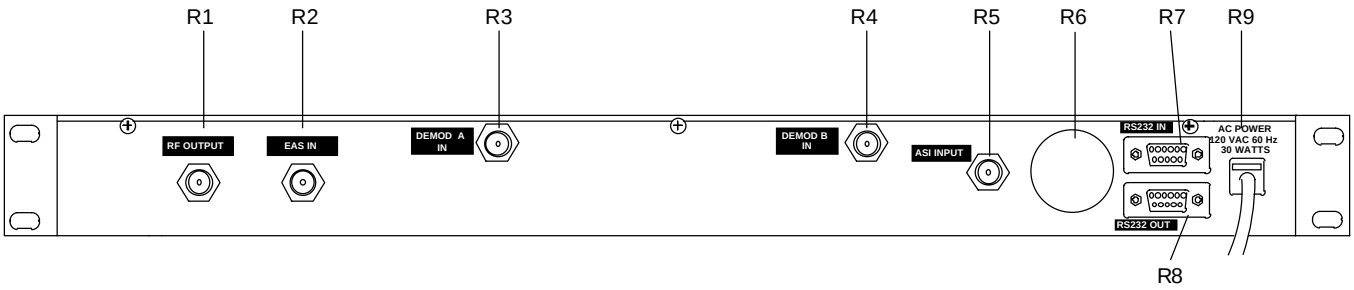
During operation, the S/N (signal to noise ratios) of the demodulator input signals are displayed. For 8VSB inputs, the threshold is about 15 dB. For QAM inputs, the threshold is about 23 dB for 64QAM and 27 dB for 256QAM. You should maintain a S/N several dB above these thresholds for reliable operation.

F2, ENTER button – Use the ENTER button to enter the adjust mode or to save and load a new setting or settings after adjustment. Hold for 2 seconds until the bottom line of the display starts to flash to enter the adjust mode. After entering the adjust mode, momentarily pressing the ENTER button again will load and save any settings that may have been changed using the F5 & F6 buttons.

F3 & F4, ◀ Left and ▶ Right Buttons – Use the left and right arrow buttons to navigate from screen to screen to view a parameter setting. These buttons are operational in the view mode or the adjust mode. Using only these buttons will not change any parameter settings. After a short period of button inactivity, the default display will be returned.

F5 & F6, ▲ Up and ▼ Down Buttons – Use the down and up arrow buttons to change the value of a viewed parameter setting. The unit must be in the adjust mode with the display flashing in order for these buttons to become active for changing a parameter setting. If the unit is not in the adjust mode, pressing the up button will display the firmware version number or pressing the down button will display the output QAM symbol rate.

NOTE: The DQT1000 is shown but the MQM1000 has essentially the same front panel functionality except that certain menus will not be available for navigation.



DQT1000 - shown above
MQM1000 - same as DQT1000 except that the MQM1000 does not have the R3 and R4 demodulator inputs or the ASI optional input. Instead it has two standard ASI inputs in place of the RF inputs on the DQT1000. The ASI inputs are type BNC female connectors. These inputs are used to input the ATSC transport streams in ASI format instead of RF.

R1, RF OUTPUT – This is the high level (61 dBmV), 54 to 1002 MHz, output from the DQT1000 upconverter section.

R2, EAS IN – This input may be used to input an alternate program, usually for emergency alert system requirements. This is a 44 MHz IF input and the operating level is +30 dBmV. An auto sensing switch is built in and will switch the IF to this input whenever the RF level at this jack exceeds approximately +20 dBmV at 44 MHz. The input signal can be either analog or digital. When this input is activated, the demodulators and ASI inputs are essentially switched off as the output will be determined by the IF signal input through this jack.

R3, DEMOD A IN - DQT only - 54 to 864 MHz input for DEMOD A. From an off-air antenna or CATV system.
R3, ASI INPUT A - MQM only.

R4, DEMOD B IN - DQT ONLY - 54 to 864 MHz input for DEMOD B, if installed. From an off-air antenna or CATV system.
R4, ASI INPUT B - MQM only.

R5, ASI INPUT - DQT only - Optional DVB ASI format MPEG2 transport stream input. If installed, an ATSC stream from this input may be multiplexed with the stream from DEMOD A.

,

R6, FAN – This cooling fan pulls air through the unit for cooling. If this fan fails or is blocked the unit may become warm enough to cause the OVER TEMP alert to be activated. If the fan has failed, it should be replaced as soon as possible. Operation with an over temperature condition present for an extended period of time will lead to premature component failure even though the unit may be functioning normally when the condition is first noted.

R7, RS232 IN - Connection to a PC or modem for use with remote control / monitoring program or for firmload download.

R8, RS232 OUT - Loop to another DQT or MQM.

R9, AC Line Cord – For connection to the nominal 120 VAC power source. This unit is designed for use in countries with 120 VAC power standards but the power supply will accept an input voltage range of 90 VAC minimum to 260 VAC maximum with a power line frequency of either 50 or 60 Hz.

8 Setup and Programming

Programming and viewing of the various setup and operating parameters is accomplished using the front panel back lit, two line, sixteen character wide LCD along with the 4 arrow buttons and the ENTER button. The name of the parameter is on the top line of the display and the setting value is on the bottom line.

To observe a certain parameter setting without intending to change its value, just use the left and right arrow buttons to navigate through the menus shown in the list. The current setting for each parameter is shown on the bottom line of the display. Note that depending upon certain settings, some screens are not needed and will be skipped.

To make a change in the displayed parameter and its setting and if this is the initial setup, you will want to enter the 'adjust' mode. To do this, press the ENTER button that is located in the center of the four arrow buttons and hold in for several seconds until the display begins to flash. After you are in the adjust mode (bottom line of screen flashing) use the left and right arrows to navigate among screens and use the up and down arrows to change the parameter setting. When ENTER is pressed, the new settings will be loaded and stored and the unit will exit the 'adjust' mode. You may wish to not press ENTER until you have gone through all screens and settings and then press ENTER to save and load all changes in one step OR you can store just one or several parameters at a time and reenter adjust mode to set the next. Either method is acceptable.

Menu Item	**Parameter Setting Choices**
Top display line. Use left/right arrows to navigate.	Second display line. Must be in adjust mode to change using up/down arrows.
Demod A ChanMap: DQT	CATV IRC HRC Broadcast
Demod A Channel: DQT	#
Demod A Mode: DQT	VSB-8 VSB-16 QAM-16A QAM-32A QAM-64A QAM-128A QAM-256A QAM-64B QAM-256B
Demod A SymRate: DQT	Preset (If Preset, Sym Rate is... 5.381119 for VSB modes 5.000000 for all QAM-A 5.056841 for QAM-64B 5.360537 for QAM-256B) Manual
Demod A SymRate: DQT	x.xxxxxx (Only if Manual)
MULTIPLEX: DQT, MQM	Disabled Demod B ASI
MPEG PROGRAMS: (MULTIPLEX is not disabled)	Select All Programs Select Programs *(See details on pages 9 & 10)*
Demod B ChanMap: DQT	CATV (Only if Demod B Enabled) IRC HRC Broadcast
Demod B Channel: DQT	# (Only if Demod B Enabled)
Demod B Mode: DQT	VSB-8 (Only of Demod B Enabled) VSB-16 QAM-16A QAM-32A QAM-64A QAM-128A QAM-256A QAM-64B QAM-256B
Demod B SymRate: DQT	Preset (Only if Demod B Enabled) (If Preset, Sym Rate is... 5.381119 for VSB modes 5.000000 for all QAM-A 5.056841 for QAM-64B 5.360537 for QAM-256B) Manual
SymRate: DQT	x.xxxxxx (Only of Demod B Enabled) (Only if Manual)
Input B Offset: DQT, MQM	0 (Only if Multiplex Enabled) 10 20 30 40 50 60 70 80 90
PSIP: DQT, MQM	Enabled Disabled Basic MGT & VCT
VCT TABLE: DQT, MQM	TVCT (Only if Multiplex Enabled) CVCT
Major Channel: DQT, MQM	Original (Only if Multiplex Enabled) RF Channel

QAM Mode: QAM-16A
QAM-32A
QAM-64A
QAM-128A
QAM-256A
QAM-512A
QAM-1024A
QAM-64B
QAM-256B
QAM-1024B

Gray Encoding: DVB (Only if ITU-A selected)
DAVIC

QAM Sym Rate: Preset (If Preset, Sym Rate is...
DQT, MQM 5.0000 for all ITU-A,
5.0570 for QAM-64B
5.3606 for QAM-256B
5.3606 for QAM-1024B)
Manual

QAM Sym Rate: x.xxxx M Sym/Sec (Only if Manual)
DQT, MQM

Interleaver: I128,J1 (Only if ITU-B selected...
I128,J2 fixed at I12,J17 if ITU-A)
I64,J2
I128,J3
I32,J4
I128,J4
I16,J8
I128,J5
I8,J16
I128,J6
I4,J32
I128,J7
I2,J64
I128,J8
I1,J128

Output Format: Normal
CW
STANDBY
PRBS 15
PRBS 15M
PRBS 23
PRBS 23M

Output ChanMap: CATV
IRC
HRC
Broadcast

OUTPUT CHANNEL: #

RF OUT: xx.x dBmV (45.0 to 62.0 dBmV)

UNIT ID: # (0 thru 63)

RS232 Baud Rate: 2400
4800
9600
19,200

DEMOD A CHANMAP: Select the setting corresponding to source of the input to DEMOD A. Choices are BROADCAST, CATV, IRC, HRC.

DEMOD A CHANNEL: Select the desired channel number.

DEMOD A MODE: Select the modulation type of DEMOD A input signal. Choices are VSB-8, VSB-16, QAM-256B, QAM-64B, QAM-256A, QAM-128A, QAM-64A, QAM-32A, QAM16A. Off air broadcast signals will be VSB-8. In the QAM choices, the B suffix is DigiCipher II (used by most major MSOs) and the A suffix is DVB.

DEMOD A SYMRATE: This is the symbol rate or baud rate of the desired input signal on the DEMOD A input. The choices are PRESET or MANUAL. If PRESET is selected, the most commonly used rates are set and can be viewed in the screen following this screen after exiting the 'adjust' mode. If MANUAL is selected, use the right arrow to go on to the continuation of this screen and then use the up and down arrows to set the desired symbol rate. Use PRESET for off-air VSB-8, signals.

MULTIPLEX: This setting determines whether the DEMOD A input is to be multiplexed with a second input (if installed). Select DEMOD B to activate the B channel demodulator and to turn on the multiplex function. Select ASI if the second input is present at the ASI input connector and it is desired to multiplex this ASI input stream with the stream from DEMOD A. DEMOD B (if also installed) will be turned off in the ASI setting. When DEMOD B is chosen, any data at the ASI input is ignored. If the DQT1000 is being used as a processor of only one input at DEMOD A, select DISABLED. If DISABLED is selected, the next menu will be the QAM MODE menu, you may skip to that paragraph, below.

MPEG PROGRAMS: This menu provides selections to determine which programs are multiplexed to form the new multiprogram transport stream output that will be supplied to the QAM modulator section. Choose the SELECT ALL PROGS setting to multiplex all programs from inputs A and B.

It is the operator's responsibility to be sure that the total data rate of these programs does not exceed the maximum data rate for the output QAM mode that will be used. If the total input rate is too large, some programs will have to be dropped from the multiplex.

Choose the SELECT PROGRAMS setting to allow the operator to pick which programs from the A and B inputs are to be included in the output multiplex.

NOTE: At this point you may proceed through the remaining menus, below, before pressing the ENTER button to load the selected data OR you may press ENTER now and then come back to the rest of the menus. In any case, when the ENTER button is pressed, one of the following two actions will occur:

A) If SELECT ALL PROGS has been selected, the DQT1000 will now read PAT tables from the two input streams and

find out which MPEG programs are defined. If you wish to view the MPEG program numbers of programs that were found, follow the procedure below:

VIEWING MPEG PROGRAM NUMBERS
In order to see the MPEG program numbers of incoming streams, the following procedure can be followed:
1) Press the ENTER button for 2 seconds to enter program mode. Release button. Display will be flashing.
2) Press the ENTER key again and hold. By continuing to hold in the ENTER button, the following display will be slowed down so that program numbers can be read as they scroll by.
3) A screen will be displayed that indicates:
PMT PROG A xxxx or PMT PROG B xxxx.
4) The xxxx field will be a number that corresponds to the MPEG program number of a program found in the PMT table for the indicated (A or B) input. As the button is held, all entries for input A will scroll past and then entries for input B will scroll past.
5) Release button and if necessary repeat steps 1 - 4.

B) If SELECT PROGRAMS was chosen, the unit will read the PAT tables from both inputs and then display:
MPEG PROG XXXXX: (XXXXX is a number from 00001 to 65535) on the top line of the display. Using the right and left arrow keys, you can scroll through all 65535 possible program numbers.

Don't be alarmed by the large number of possibilities because if the arrow key is held down, the scrolling will speed up so all 65535 possible numbers can be scanned in a short time - any time an entry is found at a given program number, the scrolling will slow down to give the operator time to see it and stop scrolling, if desired. Usually, all programs are known to be numbered between 01 and 20.

For each MPEG program number, displayed on the top line, the bottom line, on the right, will indicate A, B, AB, or nothing. This will indicate that the program number on the top line was found in input A or B or AB for both or not in either one if blank.

To select programs to be included in the output multiplex, use the up and down arrow keys to select NOT SELECTED, INPUT A, INPUT B, or INPUT A+B. If NOT SELECTED is used, then this program number will not be present in the output and any programs with this program number that are present in the A or B inputs will be filtered out. If INPUT A is selected, the A input program only is used. If INPUT B is selected, the B program is used and A filtered out. If INPUT A+B is chosen, then both are accepted if present.

Note: It is OK to use this menu to set up desired program selections 'off line'. That is, with no actual input at the present time. Programs may be selected that may not currently be in the input stream but are desired at some future time.

Note: It is possible to select both programs with the same program number - one from A and one from B as long as the INPUT B offset is set so that the B program number plus the offset amount does not duplicate a program number from the A input. The offset is not included in the MPEG program number display being discussed above but the offset will be added to all MPEG program numbers from the B input when they are added to the output multiplex.

DEMOD B CHANMAP, DEMOD B CHANNEL, DEMOD B MODE, DEMOD B SYMRATE:
See descriptions for DEMOD A above. These are equivalent settings for the DEMOD B demodulator input, when installed.

INPUT B OFFSET: When the DEMOD B or ASI input has been installed and selected in the MULTIPLEX menu, this menu will be present. Because the two incoming transport streams are likely to have overlapping use of MPEG program numbers, the DQT861 or MQM861 will pass the program numbers from input A unchanged and an offset, equal to the value chosen in this menu, will be added to the program number of programs from the second input. This same offset value will also be added to the minor channel number in the VCT table for programs from the second input source. Usually an offset of 10 will be adequate but if you know there are programs in the signal input to input A using program numbers above 10, a higher offset may be required. Values between and 10 and 90, in increments of 10, are available for selection. When it is known that there is no overlap between input A and input B stream program numbers, a 0 offset setting can be used. Be cautious if this is the selection that is chosen.

PSIP: This menu provides a choice of how the unit organizes the PSIP information from two ATSC streams that are being multiplexed.

In the ENABLED setting, information from the MGT and VCT tables from both signals will be used to build a new table for the combined output signal. Both input streams must have these tables present in order for the unit to be able to perform this operation. EIT tables will be processed so as to provide program information, if present, for the next 12 hours. This selection is the only one that passes EIT table program information to the multiplexed output signal. RRT and STT tables from Demod A are passed through.

If the broadcast station is not transmitting complete MGT and VCT tables, the ENABLED selection cannot be used. In this situation, DISABLED may be selected. In DISABLED mode, the unit does not process or output any MGT, VCT, or EIT tables. This can be a fine solution for cable systems that use set top boxes which operate from their own system channel map and have no need for these tables. MPEG program information is still processed. Some retail consumer QAM set tops operate perfectly in this mode and others may not.

The third option is the BASIC MGT, VCT choice. When this selection is made, the DQT1000 or MQM1000 will build its own MGT and VCT tables from the incoming streams even if one or both of the streams do not contain these tables. This solution should satisfy all types of set top boxes but will not provide any EIT table program guide information.

The STT and RRT tables from the source are passed through unchanged in the ENABLED mode and filtered out in the other modes.

VCT TABLE: This menu is only available when ENABLED or BASIC MGT, VCT has been selected in the previous PSIP menu. You may select the TVCT - TV channel table or CVCT table for CATV. Usually the TVCT choice must be selected for ATSC input signals.

MAJOR CHANNEL: This menu is not available if PSIP is disabled. When ORIGINAL is selected, the major channel number indicated in the output tables will be that sent by the original broadcaster. If OUTPUT CHANNEL is selected, the major channel number will be set to the channel number of the DQT1000 RF output channel. This setting will determine how a channel number is displayed on a consumer TV if the TV is tuning the output of the DQT1000 without a cable box. When a cable box is used, it usually does not require or use this information.

QAM MODE: This menu allows the user to set the modulation type for the output. Choices range from 16-QAM through 256-QAM. A suffixes indicate DVB compliant FEC and the B suffixes indicate DigiCipher II FEC encoding. Note that when using the DQT1000 or MQM1000 in the multiplex mode, the output QAM mode usually must be 256-QAM. For CATV systems using DigiCipher II, select the QAM-256B mode. For DISH Network QAM distribution or other DVB systems using DVB set tops, choose the QAM-256A mode.

When used for a single input processing function, choose the output mode accordingly from any of the available options that will provide a high enough data rate.

QAM SYMRATE: This menu allows selection of the output QAM baudrate or symbol rate. Set as required by the set top box. When multiplexing two ATSC input signals, in DigiCipher II, 256-QAM CATV systems, this is usually 5.3606 Ms/s. In DVB systems, the rate would be 5.264 Ms/s. In any case, the rate must be high enough to provide a data bitrate of at least 38.81 Mbps (do not confuse this with the symbol rate). If the set top box requires a fixed higher rate, this may be manually set.

INTERLEAVER: Sets the QAM modulator interleaver. Choose among the available selections based upon your system / set top box requirements. For typical 256-QAM. DigiCipher II CATV systems, I128, J1 is the most commonly used interleave setting but many other choices are available. This menu does not appear in the adjust mode if the QAM mode is A (DVB) as there is only one choice in the DVB standard. When not in adjust mode, this screen will display the setting in QAM - A modes as well.

OUTPUT FORMAT: For normal operation, select NORMAL. For system level set up, choose CW to provide a CW carrier at the center frequency of the output channel for use in leveling a system when a QAM power meter is not available. To disable all RF output, select STANDBY. In the CW mode, the CW carrier can be measured on a spectrum analyzer without a need to apply a bandwidth correction or it can be measured with an analog meter tuned to channel center. The CW power measured will equal the channel QAM power when the modulator is returned to NORMAL output mode. Usually QAM signals are set 5 dB to 10 dB below analog NTSC channels when balancing a system.

The PRBS modes provide a pseudo random binary sequence output test signal for use in laboratory testing.

OUTPUT CHANMAP, OUTPUT CHANNEL: Select the desired EIA CATV channel output using these two menus.

RF OUT: Select the desired RF output signal level. The available range is between 45 dBmV and 62 dBmV, selectable in 0.5 dB steps. The output accuracy is ± 1 dB.

UNIT ID: Select the desired unit identification number when connecting the 'RS232 IN' connector to a PC or modem for remote control using Drake Remote Control Software. Numbers 1 thru 63 may be used. If zero (0) is selected, the PC will ignore the unit.

RS232 BAUD RATE: This setting determines the baud rate at which the DQT1000 or MQM1000 communicates with the remote PC. Settings available are 2400, 4800, 9600 and 19,200. All unit 'daisy chained' to the remote PC or modem must be set to the same baud rate.

OPERATION - MULTIPLEXING TWO ATSC INPUTS

To use the DQT1000 or the MQM1000 to multiplex two ATSC inputs, proceed as follows:

1) Connect the off-air antenna or CATV feed to the DEMOD A and DEMOD B inputs of the DQT1000 or connect the two ASI inputs to the MQM1000. For the DQT1000 the two input connectors are separate in case the two RF signals must come from different antennas or if one signal is coming from a cable system, etc. If using a common antenna, use a good quality two way splitter to split the antenna and feed each input.
2) Plug the power cord from the unit into the power source.
3) Follow the instructions in the programming section above to set the channel map and channel number for both DEMOD A and DEMOD B - DQT1000 only.
4) Set the DEMOD SYMRATE to PRESET for both the A and B channel - DQT1000 only.
5) Set the MULTIPLEX setting to DEMOD B for the DQT1000 or to ASI for the MQM1000
6) Set the MUX OFFSET to 10. Read details in programming section to determine if you need another value.
7) Select the desired MPEG programs. (See the previous section for details.)
8) In the PSIP menu, select BASIC MGT VCT for now, this may be changed later. See programming section for detail.
9) In the VCT TABLE menu, select TVCT.
10) In the MAJOR CHANNEL menu, select OUTPUT CHANNEL. This may be changed later.
11) From the QAM MODE menu, set the QAM modulator to QAM-256B for use in a DigiCipher II environment. If DVB, use QAM-256A instead.
12) In the QAM SYMRATE menu, select PRESET.
13) Set the INTERLEAVER to I128,J1 if in a DigiCipher II environment. There is no interleaver menu when the QAM mode is set to A (DVB).
14) Set the OUTPUT FORMAT to NORMAL.
15) Set the OUTPUT CHANMAP and OUTPUT CHANNEL to the desired EIA CATV output channel.

If the second program is being input to a DQT1000 via the ASI input instead of DEMOD B, the same steps apply except that the MULTIPLEX setting will be ASI and there will be no parameters to set for DEMOD B.

SET TOP BOX MAPPING

When setting up a program map for your set top boxes to include off-air channels that are multiplexed by the DQT1000 or MQM1000 be sure to inform the programmer that the MPEG program numbers for the programs coming in through DEMOD B or ASI B have been offset by the amount selected in the MUX OFFSET menu. As an example: If input A is providing a channel with MPEG programs 1 and 2 in the stream and input B is providing a channel with MPEG programs 1, 2, 3, 4, and 5 in the stream, and the MUX OFFSET is set to 10, then the new output signal will contain MPEG programs with program numbers of 1, 2, 11, 12, 13, 14, and 15. If the set top is not looking for the right program number, you will not receive any video!

ADDITIONAL INFORMATION

STANDBY MODE

The DQT1000 and MQM1000 have a standby output mode which turns off the RF output. This can be used when it is desirable to temporarily disable the output without unplugging the AC line cord. Select STANDBY in the OUTPUT FORMAT menu.

EAS

The DQT1000 and MQM1000 provide an IF input for Emergency Alert System applications. See R2 in the rear panel connections descriptions.

OVER TEMPERATURE SENSOR

Temperature monitoring is built into these products. If the ventilation holes or fan output opening are blocked or the fan should stop, overheating can occur. If this condition is detected, the default LCD message will change to OVER TEMP. If this occurs, the problem should be corrected as soon as possible. The unit will remain operational but the ventilation must be restored to prevent premature part failures due to overheating.

STATUS DISPLAYS

When the units are not in the adjust/program mode, status displays are shown. These vary by model: DQT1000 - shows DEMOD A and DEMOD B SNRs. MQM1000 shows ASI A and ASI B data presence. QQP860 - shows demod SNR and ERRORS. The ERRORS display is a five digit number that shows the number of correctable errors that were processed in a 4.5 second window. A low number is best.

Pushing the UP arrow button will cause the firmware version number to display. Pressing the DOWN arrow will cause QAMSYMRATE to display - the output symbol rate of the QAM modulator.

REMOTE CONTROL AND MONITORING

The DQT1000 or MQM1000 may be used with the 'Drake Digital Headend Remote Control Software' program to allow remote monitoring or control. Only version 2.6 or newer are compatible with the DQT1000 or MQM1000.

Connect the RS232 cable coming from the PC or modem to the RS232 IN DB9 rear panel connector.

Assign a UNIT ID (1 to 63) to use the remote program. Leave at, or set to, 0 if no remote access is desired.

Set the RS232 BAUD RATE to match the PC setting.

If you are familiar with the program, operation will be clear. If not familiar with it, see further instructions in the insert provided with the CDROM or stored on the CDROM.

OPTIONS

A second RF demodulator module, PN 1002369, may be added by the Drake service department to a DQT1000 that was initially purchased with only one RF input.

A DVB ASI input board, PN 1002368, is available for installation into a DQT1000.

SERVICE INFORMATION

You may contact the R.L. DRAKE Service Department for additional information or assistance by calling +1 (937) 746-6990, Monday through Friday, between 8:00 A.M. and 4:00 P.M. Eastern Time, except on holidays.

You may also contact the R.L. DRAKE Service Department by E-mail at the following address:
TechSupport@rldrake.com
or by Telefax:
+1 (937) 806-1576.

Should you want to return your unit for service, package the unit carefully using the original carton or other suitable container.

Write your return address clearly on the shipping carton and on an enclosed cover letter describing the service required, symptoms or problems. Also include your daytime telephone number and a copy of your proof of purchase.

The unit will be serviced under the terms of the R.L. DRAKE LLC Limited Warranty and returned to you.

IF YOU NEED TO CALL FOR HELP

Call our Customer Service/Technical Support line at +1 (937) 746-6990 between 8:00 A.M. and 4:00 P.M. Eastern Time, weekdays. Please have the unit's serial number available. We will also need to know the specifics of any other equipment connected to the unit.
When calling, please have the unit up and running, near the phone if possible. Our technician(s) will likely ask certain questions to aid in diagnosis of the problem. Also, have a voltmeter handy, if possible.

R.L. DRAKE also provides technical assistance by e-mail: TechSupport@rldrake.com
or by Telefax: +1 (937) 806-1576.

Many of the products that are sent to us for repair are in perfect working order when we receive them. For these units, there is a standard checkout fee that you will be charged. Please perform whatever steps are applicable from the installation sections of the Owner's Manual before calling or writing—this could save unnecessary phone charges. Please do not return the unit without contacting R.L. DRAKE first: it is preferred to help troubleshoot the problem over the phone (or by mail) first, saving you both time and money.

Inside the carton, enclose a note with your name, address, daytime phone number, and a description of the unit's problem.
The unit must be sent to the following address:

Service Department
R.L. DRAKE LLC
230 Industrial Drive
Franklin, Ohio 45005 U.S.A.

Be sure to include your street address which will be needed for UPS return. UPS Surface (Brown Label) takes 7-10 days to reach us depending on your location, Blue takes 2-3 days.

Red is an overnight service. Send the unit in a way that it can be traced if we can't verify receipt of shipment. We suggest UPS or insured postal shipment.

If the unit is still under the original owner's warranty, R.L. DRAKE will pay the cost of the return shipment to you. Our return shipping policy is that we will return it UPS Brown if received Brown or by US Mail, it will be returned Blue if received Blue or Red—or it will be returned however you prefer if you furnish the return cost for the method you select.
If the unit is out of warranty, use one of the following methods for return shipment:

1) You designate billing to American Express, VISA, MasterCard or Discover card;
2) You prepay the service charges with a personal check, or
3) You specify some other method of return and payment.

When calling, the technician can estimate the repair charges for you over the phone. This is another good reason to call before sending a unit in for repair.
Typically, equipment is repaired in five to ten working days after it arrives at R.L. DRAKE if we have all the facts. If we must call you, it may take longer. R.L. DRAKE is not responsible for damage caused by lightning, nonprofessional alterations, "acts of God", shipping damage, poor storage/handling, etc. R.L. DRAKE will make note of any shipping damage upon receipt.

You will need to send proof of purchase to receive warranty service. Typically, a copy of the invoice from an R.L. DRAKE dealer will suffice. The warranty is for the original owner only and is not transferable.

Three Year Limited Warranty

R.L. DRAKE LLC warrants to the original purchaser this product shall be free from defects in material or workmanship for three (3) years from the date of original purchase.

During the warranty period the R.L. DRAKE LLC or an authorized Drake service facility will provide, free of charge, both parts and labor necessary to correct defects in material and workmanship. At its option, R.L. DRAKE LLC may replace a defective unit.

To obtain such a warranty service, the original purchaser must:

(1) Retain invoice or original proof of purchase to establish the start of the warranty period.

(2) Notify the R.L. DRAKE LLC or the nearest authorized service facility, as soon as possible after discovery of a possible defect, of:
(a) the model and serial number,
(b) the identity of the seller and the approximate date of purchase; and
(c) A detailed description of the problem, including details on the electrical connection to associated equipment and the list of such equipment.

(3) Deliver the product to the R.L. DRAKE LLC or the nearest authorized service facility, or ship the same in its original container or equivalent, fully insured and shipping charges prepaid.

Correct maintenance, repair, and use are important to obtain proper performance from this product. Therefore carefully read the Instruction Manual. This warranty does not apply to any defect that R.L. DRAKE LLC determines is due to:

(1) Improper maintenance or repair, including the installation of parts or accessories that do not conform to the quality and specifications of the original parts.

(2) Misuse, abuse, neglect or improper installation.

(3) Accidental or intentional damage.

All implied warranties, if any, including warranties of merchantability and fitness for a particular purpose, terminate three (3) years from the date of the original purchase.

The foregoing constitutes R.L. DRAKE LLC'S entire obligation with respect to this product, and the original purchaser shall have no other remedy and no claim for incidental or consequential damages, losses or expenses. Some states do not allow limitations on how long an implied warranty lasts or do not allow the exclusions or limitation of incidental or consequential damages, so the above limitation and exclusion may not apply to you.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state. This warranty shall be construed under the laws of Ohio.

For Service, contact:

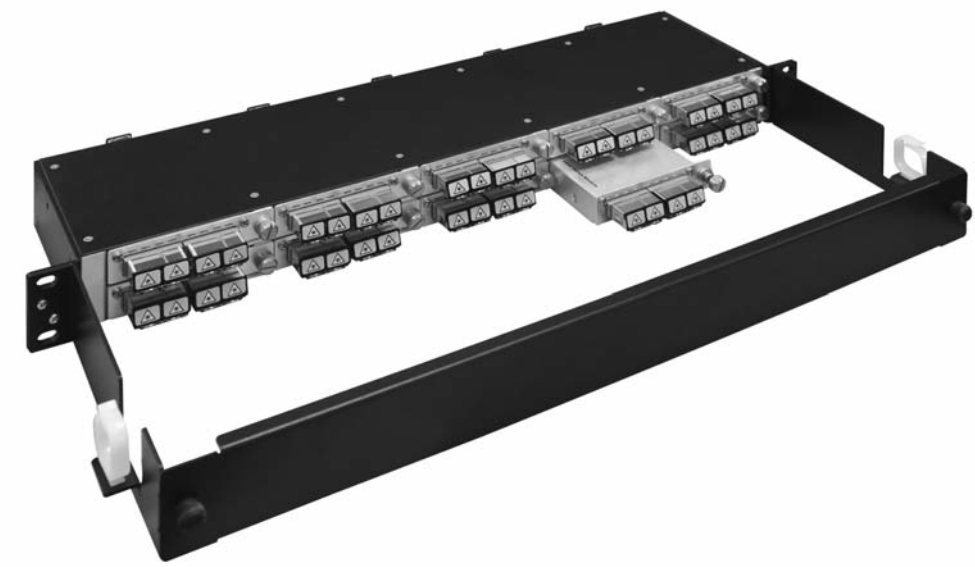
R.L. DRAKE LLC
230 Industrial Drive
Franklin, Ohio 45005 U.S.A.
Customer Service and Parts Telephone: +1 (937) 746-6990
Telefax: +1 (937) 806-1576
World Wide Web Site: http://www.rldrake.com

R.L. Drake LLC
230 Industrial Drive
Franklin, Ohio 45005 U.S.A.
Customer Service and Parts Telephone: +1 (937) 746-6990
Telefax: +1 (937) 806-1576
World Wide Web Site: http://www.rldrake.com

3400FR

1RU Passive Optical Frame

3400FR



Standalone Versions (+SA option)

The Evertz 3400FR passive optical frame is a powerful solution for today's dense, modular, passive fiber optic distribution needs. The 3400FR provides flexible optical signal distribution in the form of spliiter/combiner modules that fit in the passive optical 3400FR frame.

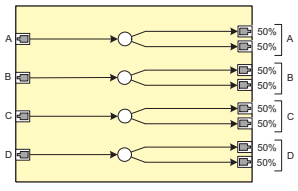
The 3400 series passive splitter/combiners can support any optical bit rate and are fully passive without the need for an active power supply.

All components are hot swappable through the front of the frame. This ensures that the unit can be fully removed without having to disrupt other signals being distributed within the same enclosure.

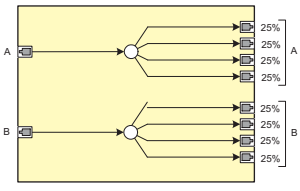
The 3400FR is a 1RU frame designed to house up to 10 splitter/combiner modules. Each module can be quad 1x2, dual 1x4 or a single 1x8 passive splitter/combiner. The frame can be configured for a mix of different splitter/combiner units. (See ordering options below)

Each of the various splitter/combiner modules are also available in a compact standalone version.

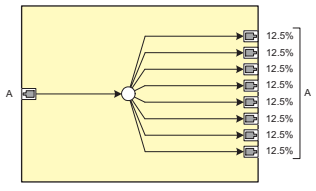
3400DS2-4



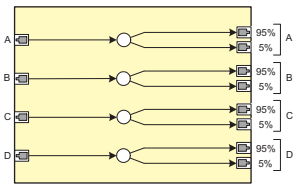
3400DS4-2



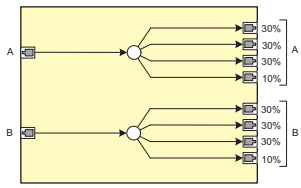
3400DS8



3400MS2-4



3400MS4-2



Note: Fiber ends available in both PC and APC

The Complete Solution Provider

Features & Benefits

- Supports 10 modules in quad 1x2, dual 1x4, single 1x8 configurations
- Wideband operation from 1270nm - 1610nm
- Passive splitter design for any bit rate
- Fully hot swappable from front of frame without having to interrupt other signals passing through the frame
- Supports single mode fiber only for high data rate and long distance applications
- Angle polished connectors available (Please see ordering options below)
- Available in equally distributed optical splitters or monitoring optical splitters
- All modules available in a compact standalone version

Specifications

Connector:	LC/PC or LC/APC	Uniformity:	
Wavelenght:	1270nm - 1610nm	3400DS2-4	< 0.8dB
Insertion Loss:		3400DS4-2	< 0.9dB
3400DS2-4	< 4.0dB maximum	3400DS8	< 1.0dB
3400DS4-2	< 8.0dB maximum	Directivity:	
3400DS8	< 11.0dB maximum	3400DS2-4	< 55dB
3400MS2-4	95% port <1dBm	3400DS4-2	< 55dB
	5% port <15dBm	3400DS8	< 55dB
3400MS4-2	30% port <5.5dBm	Fiber Size:	9µm single mode fiber
	10% port <10dBm		

Ordering Information

3400FR	1RU Passive Optical Frame

Passive Optical Modules:
Standard UPC polish

3400DS2-4	Quad 1x2 optical splitter with LC/UPC Connectors
3400DS4-2	Dual 1x4 optical splitter with LC/UPC Connectors
3400DS8	Single 1x8 optical splitter with LC/UPC Connectors
3400MS2-4	Quad 1x2 optical monitoring splitter, 90%/10% with LC/UPC Connectors
3400MS4-2	Dual 1x4 optical monitoring splitter, 30%/30%/30%/10% with LC/UPC Connectors

Angle Polish

3400DS2-4-AP	Quad 1x2 optical splitter with LC/APC Connectors
3400DS4-2-AP	Dual 1x4 optical splitter with LC/APC Connectors
3400DS8-AP	Single 1x8 optical splitter with LC/APC Connectors
3400MS2-4-AP	Quad 1x2 optical monitoring splitter, 90%/10% with LC/APC Connectors
3400MS4-2-AP	Dual 1x4 optical monitoring splitter, 30%/30%/30%/10% with LC/APC Connectors

Standalone option for Passive Optical Modules:

+SA	Standalone enclosure

Indoor Bonding Blocks

Bonding Block bodies are made of high quality, extruded, corrosion resistant aluminum alloy. The “F-81” connectors are machined brass with chromate conversion coating over cadmium plating and are installed in the extruded mounting bracket.
All models include grounding wire screw(s) and two (2) mounting screws.

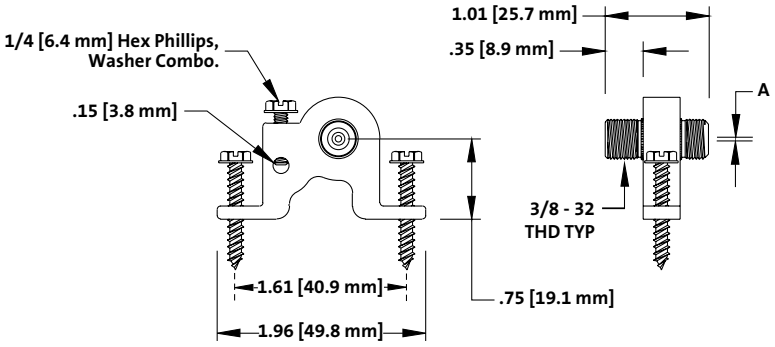
Article 820-7 of the National Electrical Code requires that:

“Where coaxial cable is exposed to lightning or to accidental contact with lightning arrester conductors or power conductors operating at a voltage of over 300 volts to ground, the outer conductive shield of the coaxial cable shall be grounded at the building premises as close to the point of cable entry as practicable.”

Bonding block numbers GGB-4U, GGB-4DU, GGB-4TSU, and GGB4D-TSU are designed to facilitate compliance with this requirement and are listed by Underwriters Laboratories, Inc.

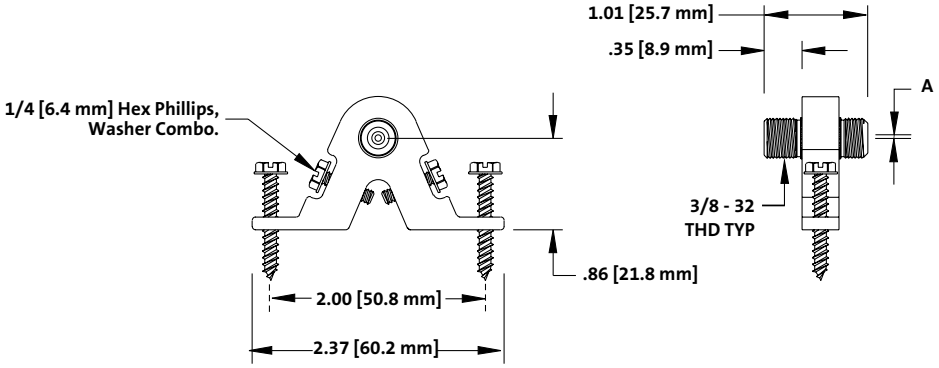
Indoor Single

Part Number	(A) Accepts
GGB-4	.020 - .047
GGB-4U (UL Listed)	.020 - .047



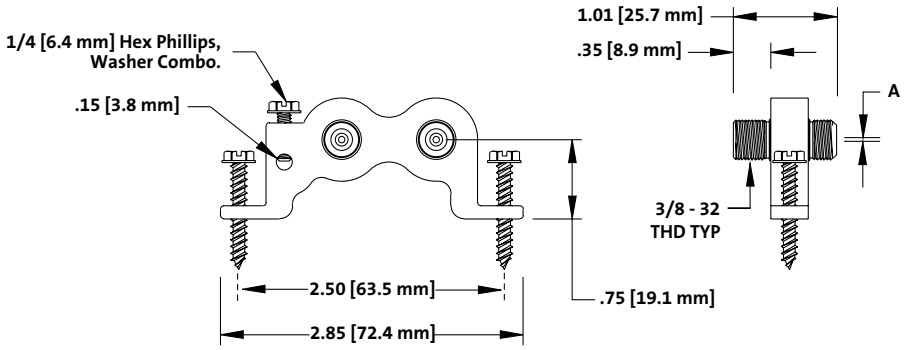
Indoor Single

Part Number	(A) Accepts
NS-6056-1	.020 - .047



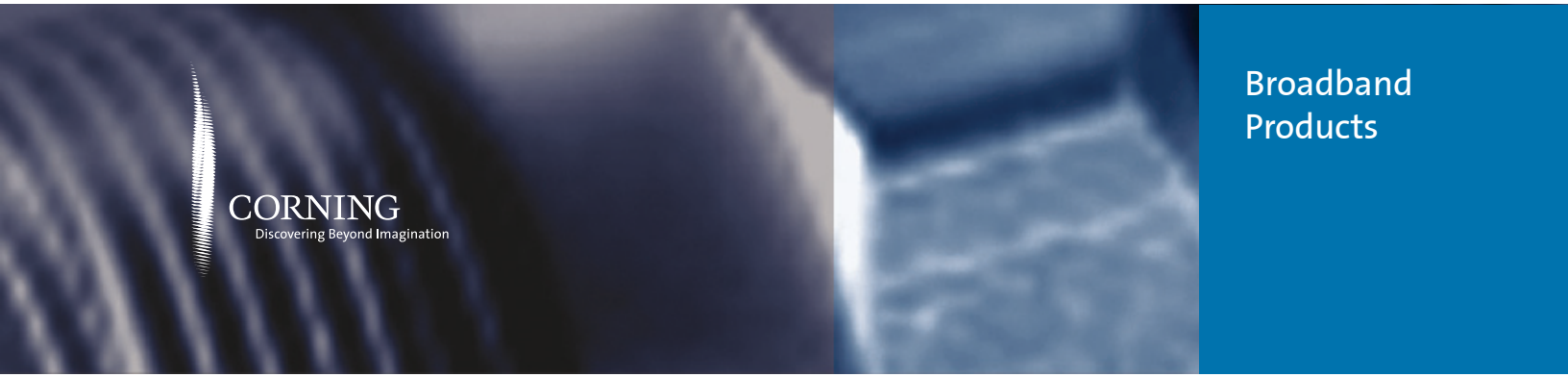
Indoor Double

Part Number	(A) Accepts
GGB-4D	.020 - .047
GGB-4DU (UL Listed)	.020 - .047



Splice Block

Product Information
(G-SPB-2.00, G-SPB-2.75, G-SPB-2.75-GLU)



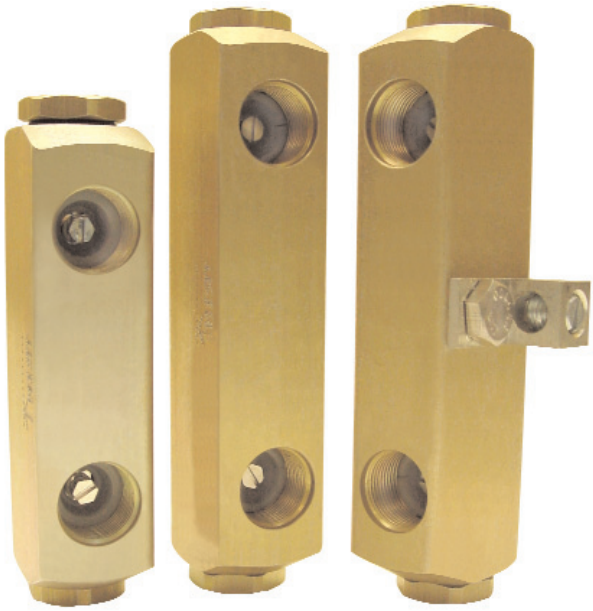
Connector Specifications

Return Loss:
>30 db @ 1 GHz

AC Power Rating:
15 amps continuous seizing mechanism ball ended seizure screws.

Listings
The G-SPB-2.75 is available with UL Listing (G-SPB-2.75-GLU).

The Gilbert Splice Block has been designed with superior electrical performance. The one-piece body is machined from a 6000 series aluminum alloy to minimize moisture ingress paths. This product is designed to give high RF performance in pedestal or straight through configurations. A custom manufactured ball ended seizure screw is utilized to eliminate plating damage on the mating pin connector. These features add to the long term performance and reliability of the Gilbert Splice Block. This product is shipped with 2 seizure screws installed. The G-SPB-2.75 is also available with UL listing (G-SPB-2.75-GLU).



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Materials and Construction of Connector Components:

6000 series aluminum alloy with gold chromate conversion coating for excellent corrosion resistance.

Contacts are brass with bright acid tin plating providing excellent RF conductivity.

Product Features and Benefits

- Highly reliable screw style seizure mechanism
- Custom ball ended seizure screw to eliminate plating damage on mating pin connector
- One piece bright acid tin plated brass contact
- Return loss: >30 dB @ 1 GHz
- G-SPB-2.75 is available with UL listing (G-SPB-2.75-GLU).
- One-piece body manufactured from 6000 series aluminum alloy with chromate conversion coating
- AC power rating: 15 amps continuous, (G-SPB-2.00 is capable of 25 amps continuous when mated with Gilbert Power Connectors)
- Accepts .067 [1.7 mm] to .075 [1.9 mm] connector pin diameter (G-SPB-2.00 accepts .067 [1.7 mm] to .122 [3.1mm] diameter)
- Trim gauge permanently marked on body, utilizes standard 0.5 pin connector trim

Product Applications

Pedestal Application:

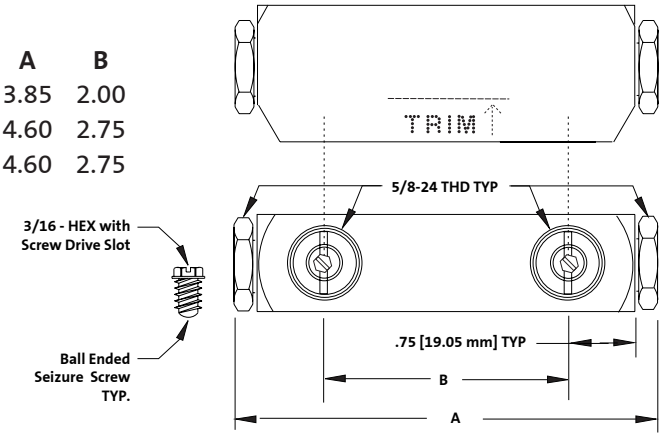
Note:

G-SPB-2.75 must be used in pedestal applications involving 1125 and 1160 connectors.

Ordering Information

Part Number	UL Listed	A	B
G-SPB-2.00	No	3.85	2.00
G-SPB-2.75	No	4.60	2.75
G-SPB-2.75-GLU*	Yes	4.60	2.75

* UL listing is available on the G-SPB-2.75-GLU only.



Corning Gilbert Inc.
Broadband Products

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website: www.corning.com/corninggilbert
e-mail: info-gilbert@corning.com

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LED LCD TV

22LE5300

22" CLASS

TBD" diagonal

HIGHLIGHTS

LED Backlighting
High Definition Resolution
3M:1 Dynamic Contrast Ratio

FEATURES

- LED Backlighting
- High Definition Resolution
- 3M:1 Dynamic Contrast Ratio
- Picture Wizard II

  (Easy Picture Calibration)
- Smart Energy Saving
- ENERGY STAR® Qualified
- AV Mode

  (Cinema, Sports, Game)
- Clear Voice II
- ISFccc® Ready
- 24P Real Cinema
- USB 2.0 (JPEG, MP3, DivX HD)
- DivX® HD
- 2 HDMI™ 1.3 Inputs
- SIMPLINK™ Connectivity
- Dolby® Digital 5.1 Decoder
- Infinite Sound

Is it a TV? Or something better?

Brighter colors. Deeper blacks. Greater energy efficiency. LED display technology is one of the latest advancements and the LE5300 offers it at a price that's in reach. Now it's easy to get into LED.

LED

You won't believe your eyes. Tired of dark scenes or dull colors? LG's Edge-lit LED technology delivers amazing clarity and color detail as well as a more energy efficient TV compared to conventional TVs.

HDTV
HIGH DEFINITION TELEVISION

See and experience more. Pictures are sharper. Colors are more vibrant. Entertainment is more real. Everthing looks better on an HDTV.

3,000,000:1
Contrast Ratio

No more worrying about dark scenes or dull colors. The Mega Contrast ratio of 3,000,000:1 delivers more stunning colors and deeper blacks than you can imagine.

Picture Wizard · Smart Energy Saving · ENERGY STAR · AV MODE · CLEAR VOICE II · isf ccc · 24 REAL CINEMA · USB 2.0 · DivX HD · HDMI · SIMPLINK · DOLBY DIGITAL

LED LCD TV

22LE5300

LG Life's Good

PANEL SPECIFICATION

Screen Size	22" Class (TBD diagonal)
Resolution	1366 x 768p
Dynamic Contrast Ratio	3,000,000:1
Response Time (GTG)	2.4ms
Viewing Angle	178°/178°

VIDEO

Built-In Tuner	ATSC/NTSC/Clear QAM
XD® Engine	•
Aspect Ratio	16:9
Aspect Ratio Correction	6 Modes
Just Scan (1:1 Pixel Matching)	
HDMI™	1080p/1080i/720p
Component	1080p/1080i/720p
RF	1080i/720p
Color Temperature Control	3 Modes
24p Real Cinema (5:5/2:2 Pulldown)	•
3:2 Pulldown	•
Picture Reset	•
AV Mode	3 Modes
Picture Mode	7 Modes
ISFccc® Ready	•
x.v.Color™	•
DTV Signal Strength Indicator	•

AUDIO

Mono/Stereo/Dual (MTS/SAP)	•
Audio Output Power (Watts - THD 10%)	10W (5W + 5W)
Speaker System Details	1 Way/2 Speakers
Dolby® Digital Decoder	•
Surround System	Infinite Sound
Bass/Treble/Balance Controls	•
Clear Voice II	•
Auto Volume Leveler II	•
EZ Sound Mode	5 Modes

SPECIAL FEATURES

Picture Wizard II	•
Backlight Control	•
Smart Energy Saving	•
1080p Source Input	
HDMI™	60p/30p/24p
Component	60p/30p/24p
RGB	60p (WXGA)
A/V Input Navigation	•
Input Labeling	•
Quick View (Flashback)	•
Parental Control w/V-Chip	•
Key Lock	•
Closed Caption	•
SIMPLINK™ (HDMI CEC)	•

CONVENIENCE FEATURES

Language	4 (English/Spanish/French/Korean)
Auto Tuning/Programming	•
Channel Add/Delete	•
Favorite Channel Programming	•
Auto/Manual Clock	•
On/Off Timer	•
Sleep Timer	•
Auto Off/Auto Sleep (When no video is present)	•

TV AUDIO/VIDEO INPUTS/OUTPUTS

RF In (Antenna/Cable)	1 (rear)
AV In	1 (rear)
Component Video In (Y, Pb, Pr) + Audio	1 (rear)
Digital Audio Out (Optical)	1 (rear)
HDMI™ 1.3/HDCP Input	2 (rear)
RGB In (D-Sub 15pin) - PC	1 (rear)
PC Audio Input	1 (rear)
RS-232c In (Control/Service)	1 (rear)
USB 2.0 (JPEG, MPEG-4/DivX HD)	1 (side)
Headphone Out	1 (side)

CABINET/ACCESSORIES

Cabinet Color	Glossy Black
Swivel Stand (Degrees)	+20°/-20°
VESA® Compliant (WxH)	• (100mm x 100mm)
Remote Control	1 (Unified)

POWER

Voltage, Hz	100V ~ 240V, 50/60Hz
On Mode (Average)	TBD
Standby Mode	<0.1W
ENERGY STAR® Qualified	•

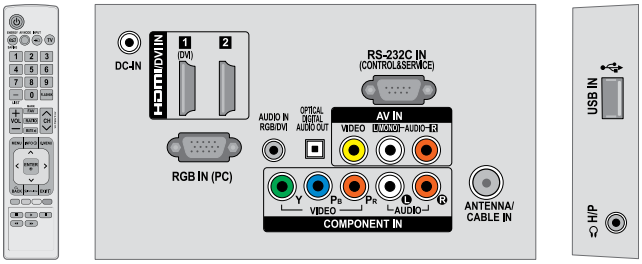
DIMENSIONS & WEIGHT

TV Without Stand (WxHxD)	21.4" x 14.0" x 1.4"
TV With Stand (WxHxD)	21.4" x 16.0" x 6.1"
Shipping Dimensions (WxHxD)	25.8" x 17.0" x 3.9"
TV Without Stand Weight	8.6 lbs
TV With Stand Weight	9.0 lbs
Shipping Weight	13.4 lbs

WARRANTY/UPC

Limited Warranty	1 Year Parts & Labor
UPC	719192177031

REMOTE/INPUT/OUTPUTS (REAR/SIDE)



LGusa.com

LG Electronics U.S.A., Inc.
1000 Sylvan Avenue Englewood Cliffs, NJ 07632
Customer Service and Technical Support: (800) 243-0000

Design, features and specifications are subject to change without notice. Non-metric weights and measurements are approximate.

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L-Com Fiber Attenuators

Premium Fiber Attenuator, LC / UPC, 5db

Features

- Used to attenuate Single mode fiber connectors/connections
- Inline design accommodates fast and easy installation
- Ceramic ferrules provide precise alignment
- Dual Wavelength (1310/1550nm) support offers multi-application flexibility
- Attenuating material-Ion Doped Fiber

Click image(s) to zoom

L-com offers an extensive line of dual wavelength (1310/1550nm) Singlemode fiber optic attenuators. These versatile in-line attenuators are the perfect solution for attenuating Singlemode fiber connectors for both lab and commercial applications. Constructed of the highest quality materials and factory tested, this series offers the widest array of connector styles and polish types. Order today!

Details

L-com Item #	FOATLCU-05D
Manufacturer	L-com
UPC # (More)	822335023550
RoHS Status	RoHS Compliant (More)

Applications

- Test and measurement
- FTTX

Diagram

2D Drawing (.pdf)

3D CAD Model (.step)

Accessories for the Premium Fiber Attenuator, LC / UPC, 5db

LC to LC Simplex Singlemode Fiber Optic Cables, 9/125 with OFNR Jacket

LC to LC Duplex Singlemode Fiber Optic Cables, 9/125 with OFNR Jacket-APC Polish

LC to LC Duplex Singlemode Fiber Optic Cables, 9/125 with OFNR Jacket

Customers who bought the Premium Fiber Attenuator, LC / UPC, 5db product also bought . . .

Fiber Coupler, SC / SC (Metal Body), Ceramic Alignment Sleeve

Fiber Coupler, ST / ST, Ceramic Alignment Sleeve

9/125, Single mode Fiber Cable, Dual ST /Dual ST, 2.0m

9/125, Single mode Fiber Cable, Dual ST /Dual ST, 1.0m

9/125, Single mode Fiber Cable, Dual ST /Dual ST, 4.0m

My Recent History . . .

Products that I have viewed

Premium Fiber Attenuator, LC / UPC, 5db

ISO 9001:2008

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ConnecTec™ Termination System

68 Connectors for 43 Cables!

Coaxial connectors play a critical role in signal transmission. That's why Liberty is pleased to introduce our new ConnecTec™ Termination System with a full product offering of advanced-engineered RCA, BNC and F connectors to fit most of our RG59, RG6 and RG6 Quad coax cables perfectly.

Designed with space-age technology, our compression connectors are revolutionary in design and exceptional in performance. With over 60 different styles of RCA, BNC and F connectors, Liberty's ConnecTec™ Termination System offers the AV professional the broadest connector selection in the industry.

Our ergonomically designed ConnecTec™ compression tool and coaxial strippers round out our termination system, providing the AV professional with a complete coaxial product solution that combines engineering sophistication with full functionality and reliability.

Here are the unique features of Liberty's exclusive ConnecTec™ line of high-quality coaxial connectors:

- Works flawlessly on RG59, RG6 and RG6 Quad
- Single piece RCAs
- Mini RCAs and BNCs for 23, 25 and 26 AWG Coax
- Color O-rings simplify matching cables with the proper connector
- Color Banding, for instant application identification, available in 7 colors: black, blue, green, orange, red, white, and yellow
- Innovative inspection window assures perfect termination
- All-metal construction for maximum durability

All of our connectors work with Liberty's CoaxMaster™ system with use of the CM-Adaptor so there is no need to re-tool.

RG6 CATV

1
PVC CATV Compression RCA
Part #: CM-RG6U-RCA

2
PVC CATV Compression RCA
Part #: CM-RG6U-GRCA

3
PVC CATV Compression BNC
Part #: CM-RG6U-BNC

4
PVC CATV Compression BNC
Part #: CM-RG6U-GBNC

5
PVC CATV Compression F
Part #: CM-RG6U-F

6
PVC CATV Compression F
Part #: CM-RG6U-GF

RG6 CATV QUAD

7
PVC CATV Compression RCA
Part #: CM-RG6Q-RCA

8
PVC CATV Compression RCA
Part #: CM-RG6Q-GRCA

9
PVC CATV Compression BNC
Part #: CM-RG6Q-BNC

10
PVC CATV Compression BNC
Part #: CM-RG6Q-GBNC

11
PVC CATV Compression F
Part #: CM-RG6Q-F

12
PVC CATV Compression F
Part #: CM-RG6Q-GF

RG6 CCTV

13
PVC CCTV Compression RCA
Part #: CM-RG6C-RCA

15
PVC CCTV Compression BNC
Part #: CM-RG6C-BNC

17
PVC CCTV Compression F
Part #: CM-RG6C-F

Solutions for the AV PROFESSIONAL
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Liberty AV Solutions

Specifications Subject to Change

Ordering is fast & easy.
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Middle Atlantic Products
EXCEPTIONAL SUPPORT & PROTECTION™

HHCM Series
Hinged Horizontal Cable Manager

GREENGUARD Indoor Air Quality Certified | RoHS | EIA/TIA Compliant

Hinged cover rackmount cable managers conceal patch cables while providing cable pass-through to equipment through the top, bottom and back of cable managers

Features

- Dresses cables between relay racks and other enclosures
- Provides cable strain relief for more reliable connections
- Multiple cable pass-throughs - top, rear, bottom and sides
- Solid face conceals cables from view
- Hinged panel allows easy entry for and access to cable bundles
- Durable flat black powder coat finish

HHCM-2 (shown)

Architects' and Engineers' Specifications

EIA compliant 19" hinged horizontal cable manager shall be Middle Atlantic Products model # HHCM-__(1,2). HHCM shall occupy (1,2) rackspaces and shall be constructed of 16-gauge steel, finished in a durable flat black powder coat. Overall dimensions shall be 19.125" W x (1.75",3.5") H x 3.5" D. Cable manager shall extend 3.5" beyond the face of the rack. Front of HHCM shall be a solid, hinged face, held closed by two magnets, provided. HHCM shall be GREENGUARD Indoor Air Quality Certified for Children and Schools. HHCM shall be RoHS EU Directive 2002/95/EC compliant. HHCM shall be manufactured by an ISO 9001 and ISO 14001 registered company. HHCM shall be warrantied to be free from defects in material or workmanship under normal use and conditions for the lifetime of the product.

96-01003 / rev 1a / 05-21-10 / HHCM Hinged Horizontal Cable Manager

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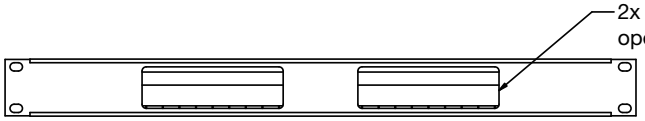
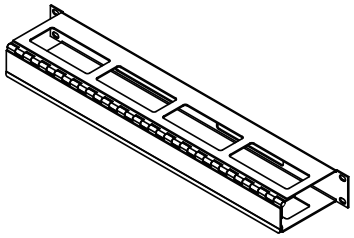
Canada: Ontario • British Columbia • Voice: 613-836-2501 Fax: 613-836-2690 • middleatlantic.ca

HHCM Series basic dimensions

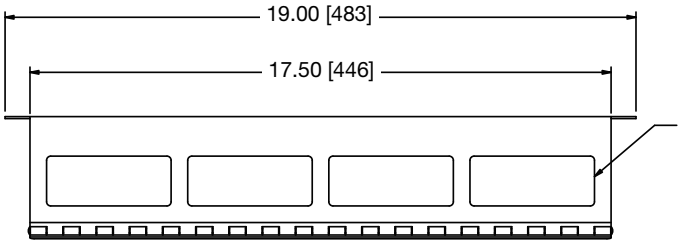
All dimensions in inches unless otherwise noted [All bracketed dimensions are in millimeters].
Some dimensions given in the form of HHCM-1 / HHCM-2



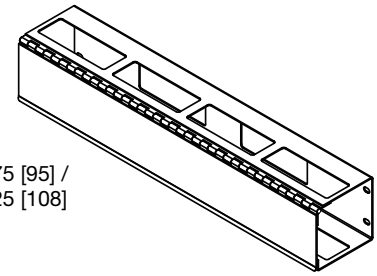
BACK VIEW



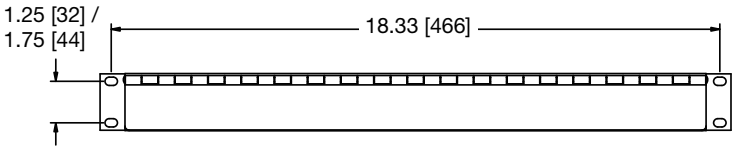
HHCM-1



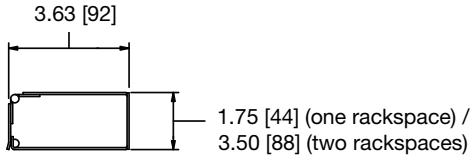
TOP VIEW
(HHCM-1 shown)



HHCM-2



FRONT VIEW



RIGHT SIDE VIEW

Middle Atlantic Products

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EXCEPTIONAL SUPPORT & PROTECTION™

WRK Series Enclosure

GREENGUARD Children & Schools Indoor Air Quality Certified | RoHS | EIA/TIA Compliant | SEISMIC CERTIFIED | c UL us LISTED

The WRK Series 19" gangable enclosure accommodates large cable bundles

Features

- Fully welded construction provides the following weight capacities - UL Listed load capacity: 2,500 lbs - Static load capacity: 10,000 lbs. - Seismic certified load capacity: 900 lbs.
- 1/8" thick structural steel internal braces
- 24-1/4" OD width, available 27-5/8" or 32-5/8" OD depth
- 1/2", 3/4", 1" & 1-1/2" electrical knockouts on split rear plates top & bottom, easily removable for cable pass-through, top plates additionally include UHF / VHF knockouts
- 2 extra-wide pairs of 11-gauge 10-32 threaded rackrail with numbered rackspace increments
- Optional solid, fully vented, plexi & vented plexi doors
- Open top with configurable top panel options
- Durable black textured powder coat finish
- Seismic certified (when used with WRK-Z4 option) with an Ip value of 1.5
- UL Listed in the US and Canada

WRK-44-32

Enclosure Accessories
ADDITIONAL RACKRAIL KIT
CASTER BASE
COPPER BUSS BAR
CRATING SERVICE
DOCUMENT POCKET
DOOR LATCH
GANGING HARDWARE
INNER PLATFORM BASE
LEVELING FEET
TOUCH-UP PAINT
SEISMIC FLOOR ANCHOR BRACKETS
CONFIGURABLE TOPS
TOP RAILS
UNIVERSAL FRONT DOORS
UNIVERSAL VENTED REAR DOORS
for details - see Master Catalog or visit middleatlantic.com

Architects' and Engineers' Specifications

EIA compliant 19" gangable equipment rack shall be Middle Atlantic Products model # WRK-__-__(see chart for available models). Overall dimensions of rack shall be __" H x 24-1/4" W x __" D (refer to chart). Useable height shall be __ rackspaces, useable depth shall be __" (refer to chart). Fully welded construction shall provide a static load capacity of 10,000 lbs. and a UL Listed 2,500 lb. weight capacity. Rack shall be constructed of the following materials: top and bottom shall be 14-gauge steel, horizontal braces shall be 16-gauge steel welded to integral structural side panels of 16-gauge steel giving an 1/8" thick structure, all structural elements shall be finished in a durable black powder coat. Rack shall include locking, latching rear door. Rack shall come equipped with two pairs of 11-gauge steel rackrail with tapped 10-32 mounting holes in universal EIA spacing. Finished in black e-coat with numbered rackspaces. Top and bottom of rack shall have a vertical slotted vent pattern. Rack shall have removable split rear knockout panels with 1/2", 3/4", 1", and 1-1/2" electrical knockouts installed in base, and removable split rear knockout panels with 1/2", 3/4", 1", and 1-1/2" electrical knockouts, and BNC knockouts for UHF/VHF antennae installed in top. Grounding and bonding stud shall be 1/4-20 threaded, installed in base of enclosure. WRK Series enclosures shall satisfy the 2007 & 2010 CBC; 2006, 2009 & 2012 IBC; ASCE 7-05 (2005 Edition) & ASCE 7-10 (2010 Edition) and the 2006 & 2009 editions of NFPA 5000 for use in areas of high seismicity, Seismic Use Group III, Zone 4 or Seismic Design Category (SDC) "D" with lateral force requirements for protecting 900 lbs. of essential equipment in locations with the highest level of seismicity and top floor or rooftop installations with an Importance factor (Ip) of 1.5 when used with WRK-Z4 seismic floor anchor bracket. Rack shall be UL Listed in the US and Canada. Rack shall be GREENGUARD Indoor Air Quality Certified for Children and Schools. Rack shall be RoHS EU Directive 2002/95/EC compliant. Rack shall be manufactured by an ISO 9001 and ISO 14001 registered company. Rack shall be warrantied to be free from defects in material or workmanship under normal use and conditions for the lifetime of the rack.

OPTIONS

- Front doors shall be 16-gauge reinforced steel, model # FD-XX (solid), VFD-XX (vented, 25% open area), LVFD-XX (vented, 64% open area), PFD- XX(plexi), PVFD-44 (vented plexi) (X=# of rackspaces of WRK rack)
- Vented rear doors shall be 16-gauge steel model # MW-VRD-44 (vented, top and bottom), MW-LVRD-XX (vented 64% open area-excludes 24 and 37 space rack), (X= # of rackspaces of WRK rack), MW-CLVRD-44 (split rear door, vented, 79% open area)
- Removable keylocked side panels shall be model # SPN-XX-YY (X = # of rackspaces, Y = cabinet depth)
- Top panels multiple styles available in model # MW-ST (solid), #MW-10FT (10" fan), MW-4FT (four 4-1/2" fans), MW-6FT (three 6" fans), MW-VT (vented) and MW-LA (accepts 6" & 12" wide cable ladders) see A&E spec 96-01063 for more details
- Caster base, four casters shall have a total weight capacity of 1300 lbs, model # CBS-WRK-YY (Y= cabinet depth)
- Inner platform base (inset base w/out casters) model # BS-WRK-YY (Y= cabinet depth)
- Leveling feet model # LF, shall be 3/8" threaded steel, adjustable from top or bottom, adds 1/4" min. to 1" max. to rack overall height
- Additional rail kit, 11-gauge, 10-32 threaded, sold in pairs, hardware included, model # WRK-RRXX (X= # of rackspaces)
- AXS slide out option available (See AXS Spec sheet 96-052S)

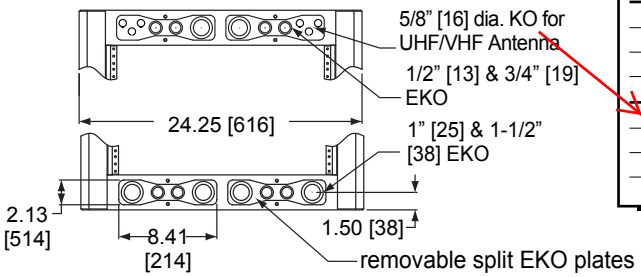
96-052 / rev 5e / 03-22-11 / WRK Series Gangable Enclosure

CUSTOMIZABLE SPECIFICATION CLIPS AVAILABLE AT MIDDLEATLANTIC.COM

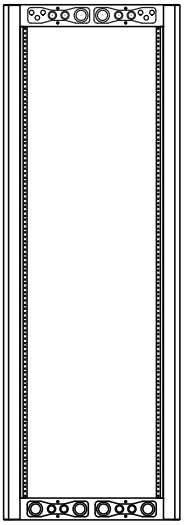
WRK basic dimensions

Part #	A OVERALL HEIGHT	B USEABLE HEIGHT	C OVERALL DEPTH	D USEABLE DEPTH	E BASE OPENING DEPTH
WRK-44-27	83.13 [2111]	77.13 [1959]	27.63 [702]	25.75 [654]	24.50 [622]
WRK-40-27	76.13 [1934]	70.13 [1781]	27.63 [702]	25.75 [654]	24.50 [622]
WRK-37-27	70.88 [1800]	64.88 [1648]	27.63 [702]	25.75 [654]	24.50 [622]]
WRK-24-27	48.13 [1222]	42.13 [1070]	27.63 [702]	25.75 [654]	24.50 [622]
WRK-44-32	83.13 [2111]	77.13 [1959]	32.63 [829]	30.75 [781]	29.50 [749]
WRK-40-32	76.13 [1934]	70.13 [1781]	32.63 [829]	30.75 [781]	29.50 [749]
WRK-37-32	70.88 [1800]	64.88 [1648]	32.63 [829]	30.75 [781]	29.50 [749]
WRK-24-32	48.13 [1222]	42.13 [1070]	32.63 [829]	30.75 [781]	29.50 [749]

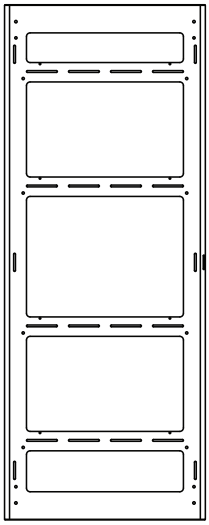
REAR VIEW, TOP & BOTTOM



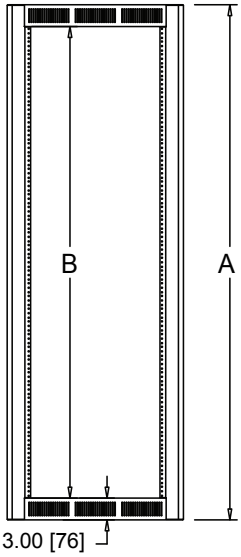
REAR VIEW



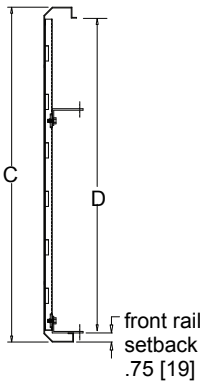
SIDE VIEW

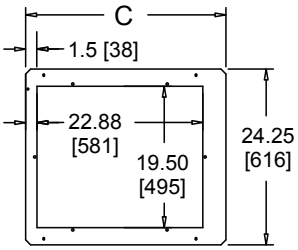


FRONT VIEW

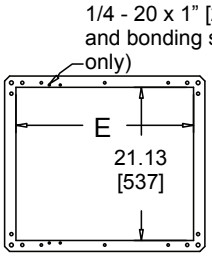


TOP SIDE SECTIONAL VIEW

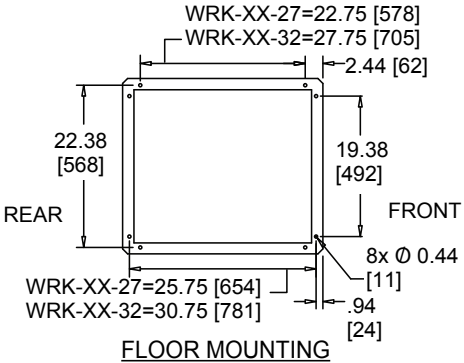




TOP VIEW



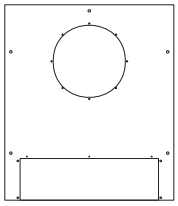
BOTTOM VIEW



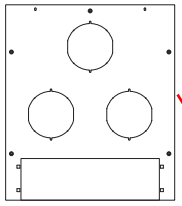
FLOOR MOUNTING LOCATIONS

All dimensions in inches unless otherwise noted [All dimensions in brackets are in millimeters]

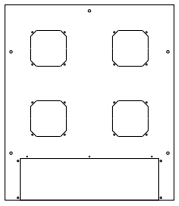
TOP OPTIONS (removable plate opening accommodates 2 space panel)



MW-10FT accepts 10" fan
MW-10FT-550CFM includes 10" fan
MW-10FT-FC includes 10" fan and fan controller

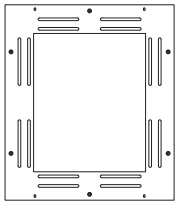


MW-6FT accepts 6" fans
MW-6FT-660CFM includes 6" fans

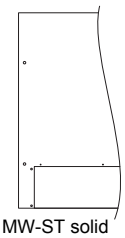


MW-4FT accepts 4-1/2" fans
MW-4FT-380CFM includes 4-1/2" fans
MW-4QFT-FC includes 4-1/2" quiet fans and fan controller

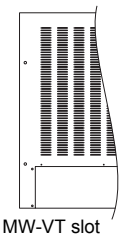
accommodates 12" and 6" width cable ladders



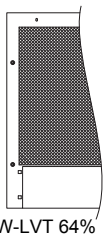
MW-LA accepts 6", 9" and 12" width cable ladder



MW-ST solid



MW-VT slot vent



MW-LVT 64% open area

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Middle Atlantic Products

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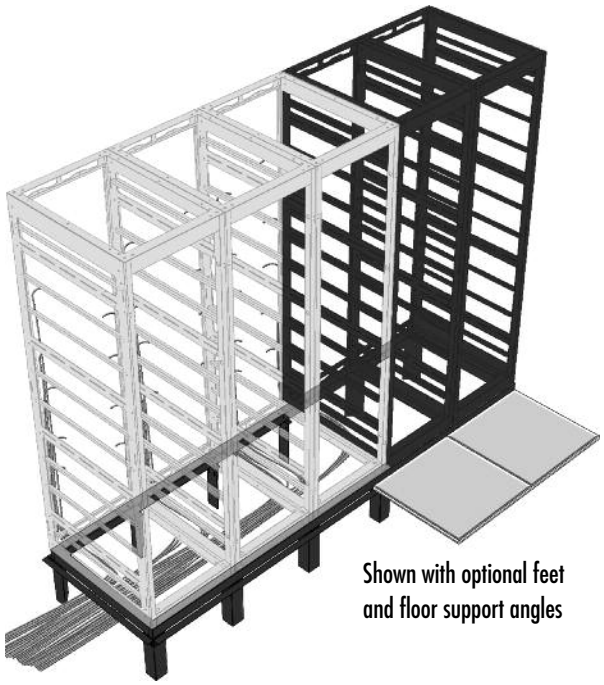
RIB Series Riser Bases

RoHS

RIB Series Riser bases provide advanced cable management

Features

- 1/8" thick fully welded construction
- Riser bases allow for field rough-in prior to arrival of racks and enclosures
- Riser bases act as a lower cable chase for passing cables between racks in multi-bay installations
- Ideal for use in raised floor installations when used with optional VFEET and ANGLE / WANGLE / DANGLE / WMANGLE
- Available in custom widths, depths, heights and configurations
- Durable black textured powdercoat finish



Shown with optional feet and floor support angles

Architects' and Engineers' Specifications

Riser base shall be Middle Atlantic Products model # RIB-_-__-_ (see chart for available models) to accommodate __ qty (refer to chart) __ (WRK / DRK / MRK / VRK / VMRK) Series __" depth racks. Riser base shall be constructed of 11-gauge steel. Riser base shall be 2-1/2" H x __" W x __" D (refer to chart). Riser base shall have one knockout on each side for cable pass-through measuring 1.71" H x ___" W (refer to chart for width dimension). Riser bases shall be phosphate pre-treated and finished a durable textured black powdercoat. Riser base shall be warrantied to be free from defects in material or workmanship under normal use and conditions for the lifetime of the product. Riser base shall be RoHS EU Directive 2002/95/EC compliant.

* Seismic Riser base option available (see SRB Spec Sheet 96-01027)

OPTIONS

Raised floor riser feet shall be Middle Atlantic Products model # VFEET-__-12 for __ (refer to chart on page 3) bay installations for use with __ (refer to chart on page 3) bay RIB series riser base. Raised floor riser feet shall be 11.5" tall, constructed of 11-gauge steel, and designed for 12" raised floors. Raised floor riser feet shall be phosphate pre-treated and finished in a durable black powdercoat.

Support angles shall be Middle Atlantic Products model # ANGLE-__-__ (for use when mounting MRK / VRK / VMRK Series racks) (refer to chart on page 4) / WANGLE-__ (for use when mounting WRK Series racks) (refer to chart) for use with __ (refer to chart on page 4) / DANGLE-__ (for use when mounting DRK Series Racks) (refer to chart). WMANGLE-__ (for use when mounting WMRK Series Racks) (refer to chart). Support angles shall be constructed from 11-gauge steel. Support angles shall be phosphate pre-treated and finished in a durable black powdercoat.

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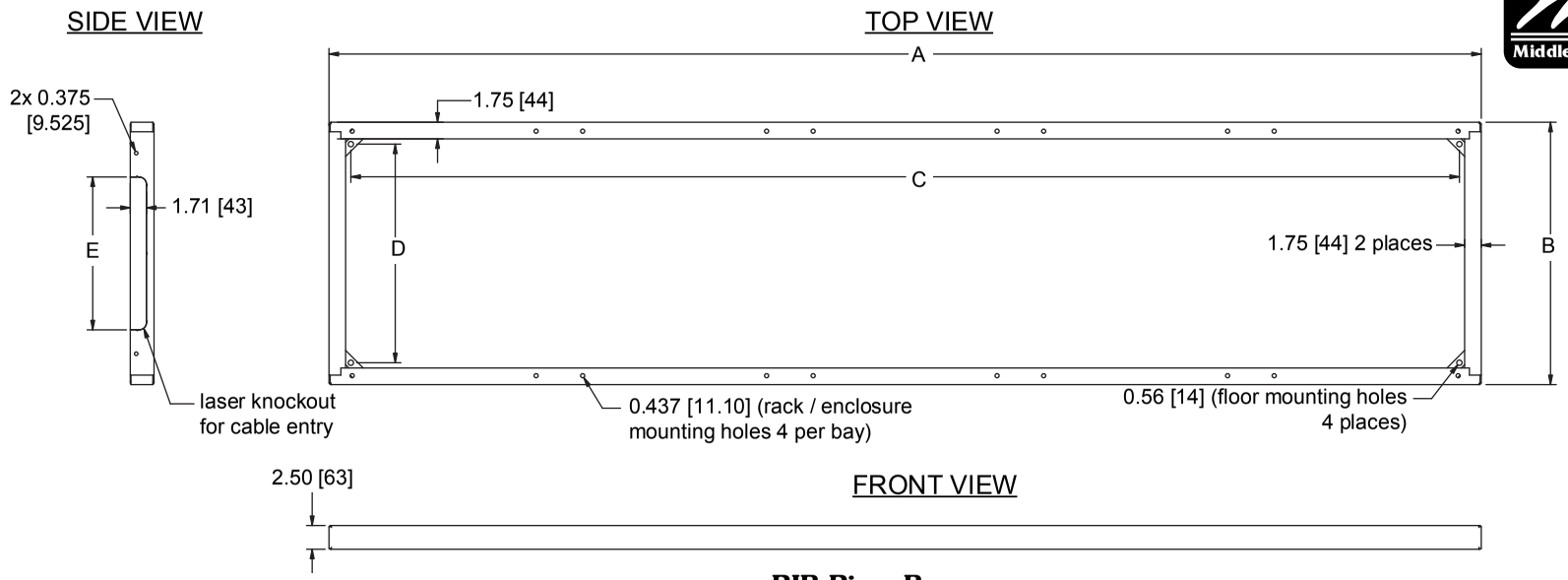
RIB Series Riser Bases basic dimensions (5 Bay shown)



RIB Riser Base

Part #	A OVERALL WIDTH	B OVERALL DEPTH	C FLOOR MOUNTING HOLES	D FLOOR MOUNTING HOLES	E KNOCKOUT WIDTH	# OF RACKS ACCOMMODATED
RIB-1-WRK-27	24.25 [616]	27.63 [702]	19.65 [499]	23.00 [584]	16.10 [409]	1
RIB-2-WRK-27	48.53 [1233]	27.63 [702]	43.93 [1116]	23.00 [584]	16.10 [409]	2
RIB-3-WRK-27	72.81 [1849]	27.63 [702]	68.21 [1733]	23.00 [584]	16.10 [409]	3
RIB-4-WRK-27	97.09 [2466]	27.63 [702]	92.49 [2349]	23.00 [584]	16.10 [409]	4
RIB-5-WRK-27	121.37 [3083]	27.63 [702]	116.77 [2966]	23.00 [584]	16.10 [409]	5
RIB-1-WRK-32	24.25 [616]	32.63 [829]	19.65 [499]	28.00 [711]	21.10 [536]	1
RIB-2-WRK-32	48.53 [1233]	32.63 [829]	43.93 [1116]	28.00 [711]	21.10 [536]	2
RIB-3-WRK-32	72.81 [1849]	32.63 [829]	68.21 [1733]	28.00 [711]	21.10 [536]	3
RIB-4-WRK-32	97.09 [2466]	32.63 [829]	92.49 [2349]	28.00 [711]	21.10 [536]	4
RIB-5-WRK-32	121.37 [3083]	32.63 [829]	116.77 [2966]	28.00 [711]	21.10 [536]	5
RIB-1-DRK-31	30.00 [762]	31.40 [798]	25.40 [645]	26.80 [681]	19.87 [508]	1
RIB-2-DRK-31	60.03 [1525]	31.40 [798]	55.43 [1408]	26.80 [681]	19.87 [508]	2
RIB-3-DRK-31	90.06 [2288]	31.40 [798]	85.46 [2171]	26.80 [681]	19.87 [508]	3
RIB-1-DRK-36	30.00 [762]	36.00 [914]	25.40 [645]	31.40 [798]	24.47 [622]	1
RIB-2-DRK-36	60.03 [1525]	36.00 [914]	55.43 [1408]	31.40 [798]	24.47 [622]	2
RIB-3-DRK-36	90.06 [2288]	36.00 [914]	85.46 [2171]	31.40 [798]	24.47 [622]	3
RIB-1-DRK-42	30.00 [762]	42.00 [1067]	25.40 [645]	37.40 [950]	30.47 [774]	1
RIB-2-DRK-42	60.03 [1525]	42.00 [1067]	55.43 [1408]	37.40 [950]	30.47 [774]	2
RIB-3-DRK-42	90.06 [2288]	42.00 [1067]	85.46 [2171]	37.40 [950]	30.47 [774]	3

Part #	A OVERALL WIDTH	B OVERALL DEPTH	C FLOOR MOUNTING HOLES	D FLOOR MOUNTING HOLES	E KNOCKOUT WIDTH	# OF RACKS ACCOMMODATED
RIB-1-MRK-26	22.00 [559]	26.40 [671]	17.40 [442]	21.80 [554]	14.87 [378]	1
RIB-2-MRK-26	44.03 [1118]	26.40 [671]	39.43 [1002]	21.80 [554]	14.87 [378]	2
RIB-3-MRK-26	66.06 [1678]	26.40 [671]	61.46 [1561]	21.80 [554]	14.87 [378]	3
RIB-4-MRK-26	88.09 [2237]	26.40 [671]	83.49 [2121]	21.80 [554]	14.87 [378]	4
RIB-5-MRK-26	110.12 [2797]	26.40 [671]	105.52 [2680]	21.80 [554]	14.87 [378]	5
RIB-1-MRK-31	22.00 [559]	31.40 [798]	17.40 [442]	26.80 [681]	19.87 [505]	1
RIB-2-MRK-31	44.03 [1118]	31.40 [798]	39.43 [1002]	26.80 [681]	19.87 [505]	2
RIB-3-MRK-31	66.06 [1678]	31.40 [798]	61.46 [1561]	26.80 [681]	19.87 [505]	3
RIB-4-MRK-31	88.09 [2237]	31.40 [798]	83.49 [2121]	26.80 [681]	19.87 [505]	4
RIB-5-MRK-31	110.12 [2797]	31.40 [798]	105.52 [2680]	26.80 [681]	19.87 [505]	5
RIB-1-MRK-36	22.00 [559]	36.00 [914]	17.40 [442]	31.40 [798]	24.47 [622]	1
RIB-2-MRK-36	44.03 [1118]	36.00 [914]	39.43 [1002]	31.40 [798]	24.47 [622]	2
RIB-3-MRK-36	66.06 [1678]	36.00 [914]	61.46 [1561]	31.40 [798]	24.47 [622]	3
RIB-4-MRK-36	88.09 [2237]	36.00 [914]	83.49 [2121]	31.40 [798]	24.47 [622]	4
RIB-5-MRK-36	110.12 [2797]	36.00 [914]	105.52 [2680]	31.40 [798]	24.47 [622]	5
RIB-1-MRK-42	22.00 [559]	42.00 [1067]	17.40 [442]	37.40 [950]	30.47 [774]	1
RIB-2-MRK-42	44.03 [1118]	42.00 [1067]	39.43 [1002]	37.40 [950]	30.47 [774]	2
RIB-3-MRK-42	66.06 [1678]	42.00 [1067]	61.46 [1561]	37.40 [950]	30.47 [774]	3

All dimensions in inches unless otherwise noted [All bracketed dimensions are in millimeters]

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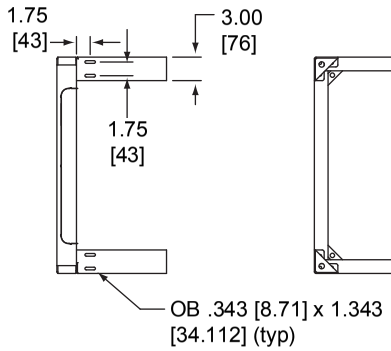
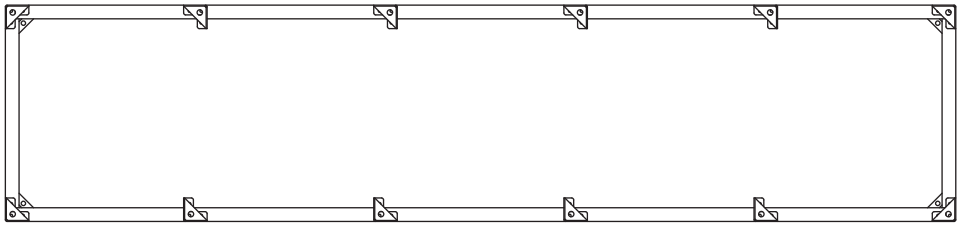
VFEET Raised Floor Riser Feet basic dimensions

SIDE VIEW



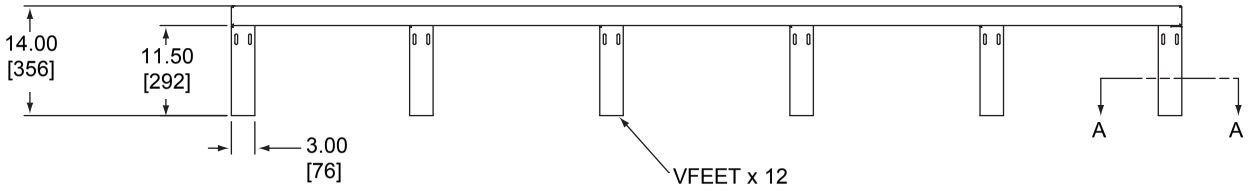
BOTTOM VIEW

(Riser base shown upside down to show VFEET positioning)



SECTION A-A

FRONT VIEW



VFEET Raised Floor Riser Feet

Part #	# OF FEET	USED ON	# OF RACKS ACCOMMODATED
VFEET-1-12	4	RIB-1	1
VFEET-2-12	6	RIB-2	2
VFEET-3-12	8	RIB-3	3
VFEET-4-12	10	RIB-4	4
VFEET-5-12	12	RIB-5	5

All dimensions in inches unless otherwise noted [All bracketed dimensions are in millimeters]

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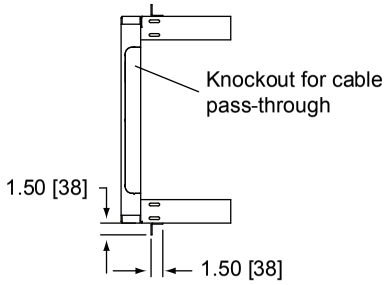
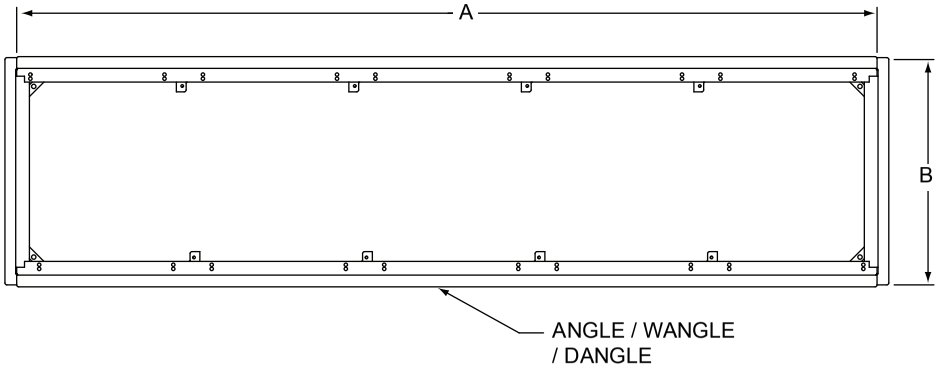
Raised Floor Support Angles basic dimensions

All dimensions in inches unless otherwise noted [All bracketed dimensions are in millimeters]

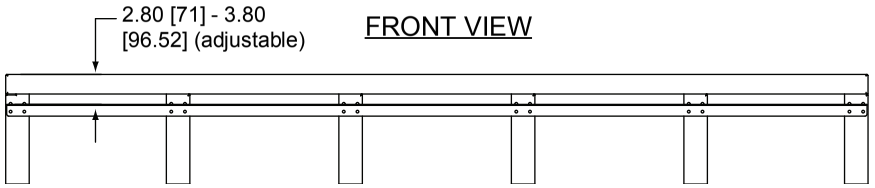
SIDE VIEW



BOTTOM VIEW



FRONT VIEW



ANGLE / WANGLE / WMANGLE / ANGLE RAISED FLOOR SUPPORT ANGLES

Part #	A OVERALL WIDTH	B OVERALL DEPTH	USED ON	RACK SERIES	# OF RACKS ACCOMMODATED
ANGLE-1	21.75 [552]	29.15 [740]	VFEET-1-12	MRK/VRK/VMRK 38″ depth racks	1
ANGLE-2	43.78 [1112]	29.15 [740]	VFEET-2-12	MRK/VRK/VMRK 38″ depth racks	2
ANGLE-3	65.81 [1672]	29.15 [740]	VFEET-3-12	MRK/VRK/VMRK 38″ depth racks	3
ANGLE-4	87.84 [2231]	29.15 [740]	VFEET-4-12	MRK/VRK/VMRK 38″ depth racks	4
ANGLE-5	109.87 [2791]	29.15 [740]	VFEET-5-12	MRK/VRK/VMRK 38″ depth racks	5
ANGLE-1-36	21.75 [552]	38.75 [984]	VFEET-1-12	MRK/VRK/VMRK 36″ depth racks	1
ANGLE-2-36	43.78 [1112]	38.75 [984]	VFEET-2-12	MRK/VRK/VMRK 36″ depth racks	2
ANGLE-3-36	65.81 [1672]	38.75 [984]	VFEET-3-12	MRK/VRK/VMRK 36″ depth racks	3
ANGLE-4-36	87.84 [2231]	38.75 [984]	VFEET-4-12	MRK/VRK/VMRK 36″ depth racks	4
ANGLE-5-36	109.87 [2791]	38.75 [984]	VFEET-5-12	MRK/VRK/VMRK 36″ depth racks	5
DANGLE-1-31	29.75 [756]	29.15 [740]	VFEET-1-12	DRK 31″ depth racks	1
DANGLE-2-31	59.78 [1518]	29.15 [740]	VFEET-2-12	DRK 31″ depth racks	2
DANGLE-3-31	89.91 [2284]	29.15 [740]	VFEET-3-12	DRK 31″ depth racks	3
WANGLE-1	24.00 [610]	30.38 [777]	VFEET-1-12	WRK 27″ and 31″ depth racks	1
WANGLE-2	48.28 [1226]	30.38 [777]	VFEET-2-12	WRK 27″ and 31″ depth racks	2
WANGLE-3	72.56 [1843]	30.38 [777]	VFEET-3-12	WRK 27″ and 31″ depth racks	3
WANGLE-4	96.84 [2460]	30.38 [777]	VFEET-4-12	WRK 27″ and 31″ depth racks	4
WANGLE-5	121.12 [3076]	30.38 [777]	VFEET-5-12	WRK 27″ and 31″ depth racks	5

Part #	A OVERALL WIDTH	B OVERALL DEPTH	USED ON	RACK SERIES	# OF RACKS ACCOMMODATED
ANGLE-1-42	21.75 [552]	38.75 [984]	VFEET-1-12	MRK 42″ depth racks	1
ANGLE-2-42	43.78 [1112]	38.75 [984]	VFEET-2-12	MRK 42″ depth racks	2
ANGLE-3-42	65.81 [1672]	38.75 [984]	VFEET-3-12	MRK 42″ depth racks	3
DANGLE-1-3642	29.75 [756]	38.75 [984]	VFEET-1-12	DRK 36″ and 42″ depth racks	1
DANGLE-2-3642	59.78 [1518]	38.75 [984]	VFEET-2-12	DRK 36″ and 42″ depth racks	2
DANGLE-3-3642	89.91 [2284]	38.75 [984]	VFEET-3-12	DRK 36″ and 42″ depth racks	3
WMANGLE-1-3642	23.69 [602]	38.75 [984]	VFEET-1-12	WMRK 36″ depth racks	1
WMANGLE-2-3642	47.655 [1210]	38.75 [984]	VFEET-2-12	WMRK 36″ depth racks	2
WMANGLE-3-3642	71.621 [1819]	38.75 [984]	VFEET-3-12	WMRK 36″ depth racks	3
WMANGLE-1-3642	23.69 [602]	38.75 [984]	VFEET-1-12	WMRK 42″ depth racks	1
WMANGLE-2-3642	47.655 [1210]	38.75 [984]	VFEET-2-12	WMRK 42″ depth racks	2
WMANGLE-3-3642	71.621 [1819]	38.75 [984]	VFEET-3-12	WMRK 42″ depth racks	3
WMANGLE-1-48	23.69 [602]	44.75 [984]	VFEET-1-12	WMRK 48″ depth racks	1
WMANGLE-2-48	47.655 [1210]	44.75 [984]	VFEET-2-12	WMRK 48″ depth racks	2
WMANGLE-3-48	71.621 [1819]	44.75 [984]	VFEET-3-12	WMRK 48″ depth racks	3

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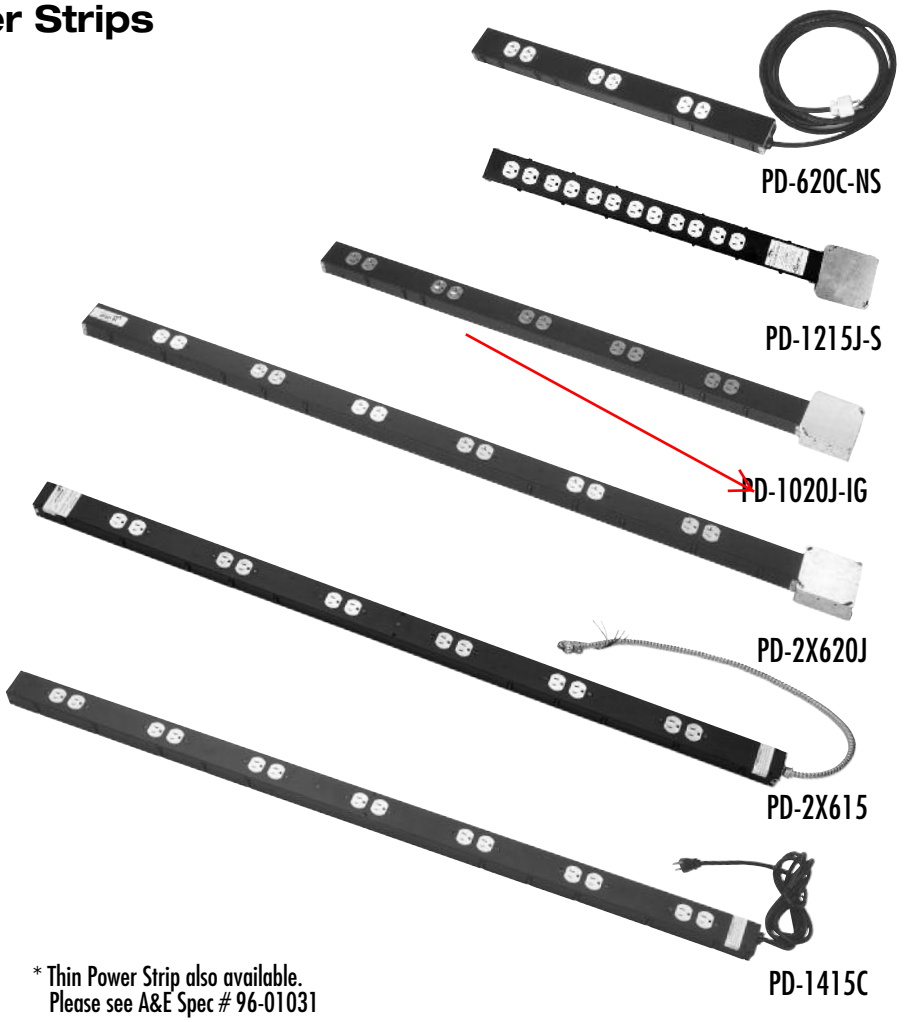
Middle Atlantic Products

EXCEPTIONAL SUPPORT & PROTECTION™

PD Series Vertical Power Strips

PD Series Vertical Power Strips



* Thin Power Strip also available.
Please see A&E Spec # 96-01031

Features

- Both 15 and 20 amp circuits available
- Multiple termination choices: cord with plug, metal flex with tails, or J-Box
- Isolated technical ground available
- "Quick-clips" to enable mounting in any enclosure
- Surge and spike protection, EMI filtering, and circuit breaker available
- Single and multiple circuit strips available
- Durable black powder coat finish
- Custom power strips available on request

Architects' and Engineers' Specifications

Vertical power strip shall be Middle Atlantic Products model # PD-_____ (refer to chart). Vertical power strip chassis shall be 16-gauge steel, phosphate pre-treated and finished in a black powder coat (see chart for additional components). Vertical power strip shall have ___ ___ amp (e.g. Strip shall have six 15 amp) outlets on ___ circuit(s), terminated with _____ (see chart for outlet, termination and additional feature details). Surge protection shall eliminate potentially damaging ground contamination and noise. Vertical power strip shall be ETL Listed to applicable UL and CSA Standards in the US and Canada. Vertical power strip shall be GREENGUARD Indoor Air Quality Certified for Children and Schools. Vertical power strip shall be RoHS EU Directive 2002/95/EC compliant. Vertical power strip shall be manufactured by an ISO 9001 registered company. Vertical power strip shall be warrantied to be free from defects in material or workmanship under normal use and conditions for a period of 3 years.

OPTIONS

- Model # PB-90, adaptor brackets to mount power strips so outlets face front or back of any rack*
- Model # PB-5A, adapter brackets to mount power strips to rackrail of SLIM 5 and AXS Series racks (pair) or rackrail of any rack
- Model # PB-DWR, adapter brackets to mount power strips in DWR Series wall racks (pair)
- Custom power strips available on request

* Requires LBFR-5A-xx to mount inside SLIM 5 or AXS Series racks

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Specifications for Hard-Wired PD Series Vertical Power Strips

PD-2X615

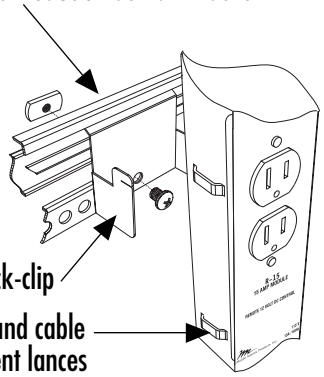
PART #	NUMBER OF OUTLETS	CIRCUITS	NEMA OUTLET TYPE	OUTLETS ACCOMMODATE (NEMA)	WIRE GAUGE	TERMINATION	ISOLATED GROUND	CIRCUIT ARRANGEMENT
PD-620J-IG	6 (3 DUPLEX)	(1) 20 AMP	5-20R	5-15P & 5-20P	12	J-BOX	YES	1-1-1-1-1-1
PD-1020J-IG	10 (5 DUPLEX)	(1) 20 AMP	5-20R	5-15P & 5-20P	12	J-BOX	YES	1-1-1-1-1-1-1-1-1-1
PD-1220J	12 (6 DUPLEX)	(1) 20 AMP	5-20R	5-15P & 5-20P	12	J-BOX	NO	1-1-1-1-1-1-1-1-1-1-1-1
PD-1220J-IG	12 (6 DUPLEX)	(1) 20 AMP	5-20R	5-15P & 5-20P	12	J-BOX	YES	1-1-1-1-1-1-1-1-1-1-1-1
PD-2X620J	12 (6 DUPLEX)	(2) 20 AMP	5-20R	5-15P & 5-20P	12	J-BOX	NO	1-1-2-2-1-1-2-2-1-1-2-2
PD-2X615	12 (6 DUPLEX)	(2) 15 AMP	5-15R	5-15P	14	3/8" FLEX TAIL	NO	1-1-2-2-1-1-2-2-1-1-2-2
PD-1215	12 (6 DUPLEX)	(1) 15 AMP	5-15R	5-15P	14	3/8" FLEX TAIL	NO	1-1-1-1-1-1-1-1-1-1-1-1
PD-1215J-S	12 (6 DUPLEX)	(1) 15 AMP	5-15R	5-15P	14	J-BOX	NO	1-1-1-1-1-1-1-1-1-1-1-1

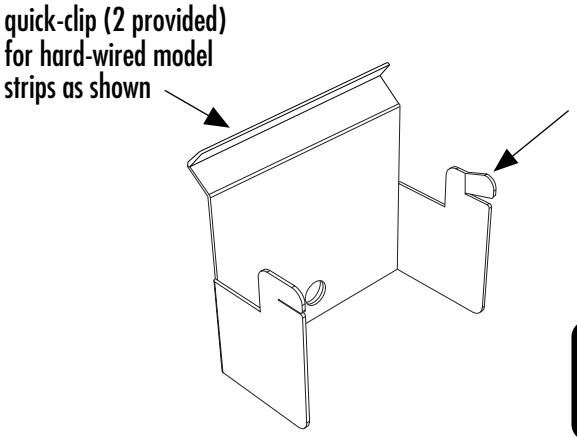
Additional Specifications for all Products Listed Above:

- UL standard 5 and CSA C22.2 No. 62
- Flex tails shall be flexible electrical metallic tubing, 3 feet long with a minimum of 6 inches of conductor extending from end. Connectors shall be included.
- Power strips with isolated ground shall have an insulated ground conductor connected to all outlet ground terminals and a separate ground conductor connected to chassis ground stud. Both ground conductors shall extend into J-Box. Isolated ground outlets shall be orange in color.
- J-Boxes (junction box) shall be 4" x 4" x 1-1/2" deep. Cover is included.
- For 2 circuit strips: First circuit outlet color shall be white, second circuit outlet color shall be ivory.
- All conductors extending into J-Boxes shall be minimum of 6" long from point of entry into box.
- No circuit protection is provided with hard-wired power strips. They require branch circuit protection.
- Finish shall be black powder coat.
- Chassis shall be 16-gauge steel.
- Mounting: quick-clip (see details), 2 supplied per strip.
- Use indoors in dry locations only.

Included Mounting Method

Middle Atlantic Products Rackrail Bracket





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PD-1415C

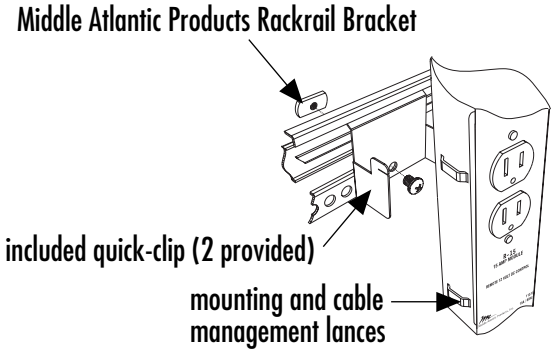
Specifications for Corded PD Series Vertical Power Strips

PART #	NUMBER OF OUTLETS	CIRCUITS	NEMA OUTLET TYPE	OUTLETS ACCOMMODATE (NEMA)	WIRE GAUGE	CIRCUIT PROTECTION	SURGE AND EMI FILTER	UL STANDARD	NEMA PLUG TYPE
PD-615C	6 (3 DUPLEX)	(1) 15 AMP	5-15R	5-15P	14	15 AMP CIRCUIT BREAKER	YES	1363 & 1449	5-15P
PD-615C-NS	6 (3 DUPLEX)	(1) 15 AMP	5-15R	5-15P	14	15 AMP CIRCUIT BREAKER	NONE	1363	5-15P
PD-620C-NS	6 (3 DUPLEX)	(1) 20 AMP	5-20R	5-15P & 5-20P	12	20 AMP CIRCUIT BREAKER	NONE	1363	5-20P
PD-1015C	10 (5 DUPLEX)	(1) 15 AMP	5-15R	5-15P	14	15 AMP CIRCUIT BREAKER	YES	1363 & 1449	5-15P
PD-1015C-NS	10 (5 DUPLEX)	(1) 15 AMP	5-15R	5-15P	14	15 AMP CIRCUIT BREAKER	NONE	1363	5-15P
PD-1020C-NS	10 (5 DUPLEX)	(1) 20 AMP	5-20R	5-15P & 5-20P	12	20 AMP CIRCUIT BREAKER	NONE	1363	5-20P
PD-1220C-NS	12 (6 DUPLEX)	(1) 20 AMP	5-20R	5-15P & 5-20P	12	20 AMP CIRCUIT BREAKER	NONE	1363	5-20P
PD-1415C	14 (7 DUPLEX)	(1) 15 AMP	5-15R	5-15P	14	15 AMP CIRCUIT BREAKER	YES	1363 & 1449	5-15P
PD-1415C-NS	14 (7 DUPLEX)	(1) 15 AMP	5-15R	5-15P	14	15 AMP CIRCUIT BREAKER	NONE	1363	5-15P

Additional Specifications for all Products Listed Above:

- UL Standard 1363 and CAN/CSA C22.2 No.21
- SignalSafe™ Cord length shall be 9 feet
- Finish shall be black powder coat
- Chassis shall be 16-gauge steel
- Outlet color shall be white
- For use indoors in dry locations only
- Quick-clip mounting (see details)

Included Mounting Method



NOTE: Provided wood screws allow for mounting of mounting clip to wood surfaces

Surge Suppression & EMI Filter Specifications

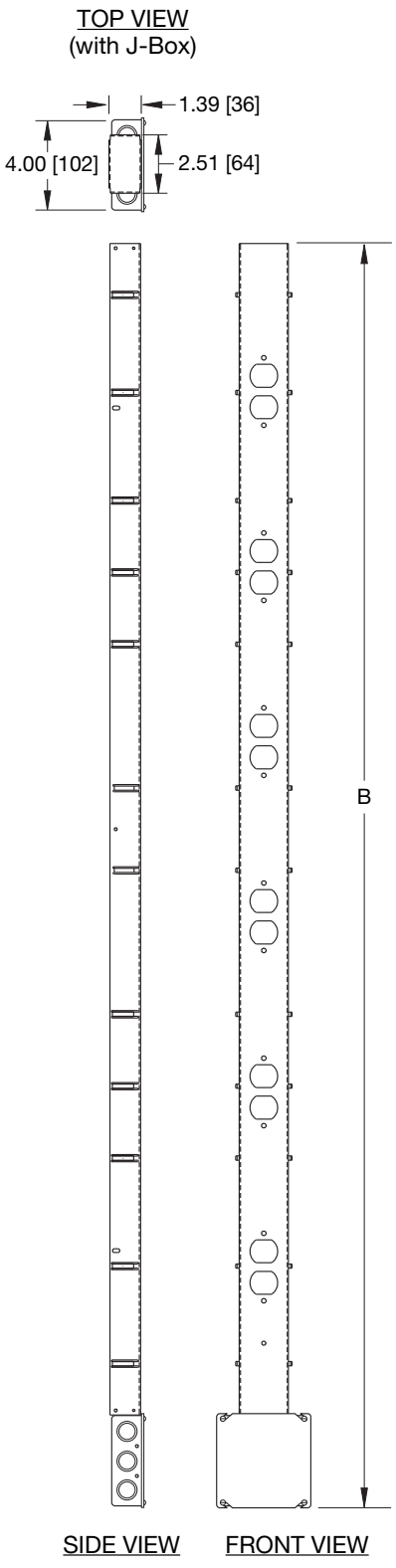
- Nominal line voltage: 120 VAC
- Maximum allowable voltage: 150 VAC (RMS)
  - Maximum continuous voltage differential applied between line and neutral
  - Maximum multiple impulse current derated per specs
- Peak impulse current (8/20 micro second.):
  - 30,000 amps, one time
  - 21,000 amps, 2 times within 5 minutes
  - 9,000 amps, ten times within 2 minutes
  - Maximum peak impulse current pulse as defined between line and neutral
  - Maximum multiple impulse current derated
- Maximum clamping voltage: 395 volts@100 amps
- Response time: Instantaneous (Less than 1 nanosecond)
- EMI/ RF Suppression: More than 20 db
  - Calculated line to neutral, 100 KHz to 1 MHz suppression based upon nominal impedance

Middle Atlantic Products

Vertical Power Strip basic dimensions

PART #	B LENGTH (FOR MODELS WITH J-BOX)
PD-620J-IG	30.5
PD-1020J-IG	44
PD-1215J-S	30.5
PD-2X620J	61
PD-1220J	61
PD-2X620J	61

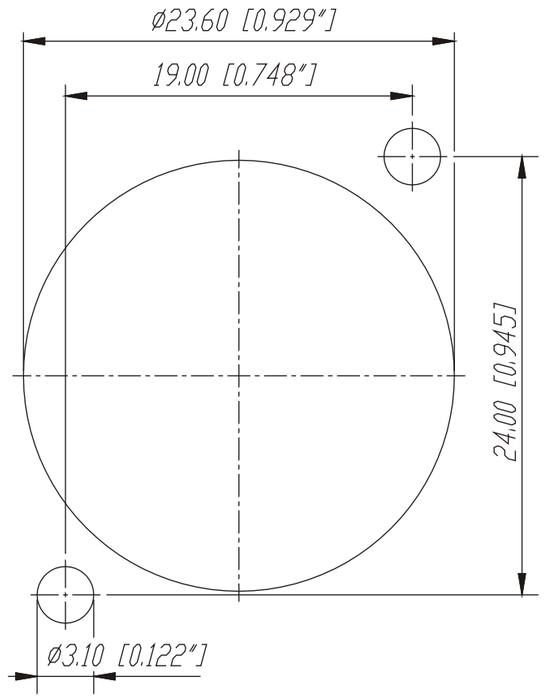
PART #	A LENGTH
PD-615C-NS	26.5
PD-620C-NS	26.5
PD-615C	26.5
PD-1015C	40
PD-1015C-NS	40
PD-1020C-NS	40
PD-1215	40
PD-1220C-NS	57
PD-1415C	57
PD-1415C-NS	57
PD-2X615	57

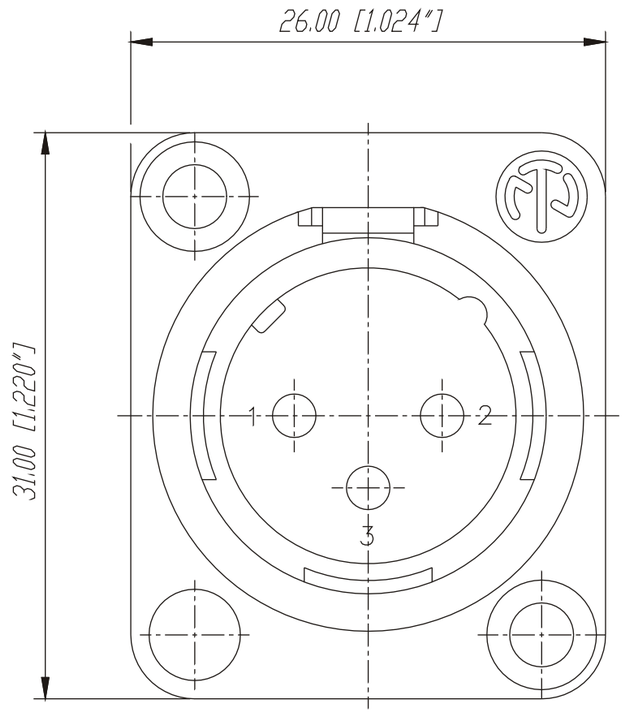


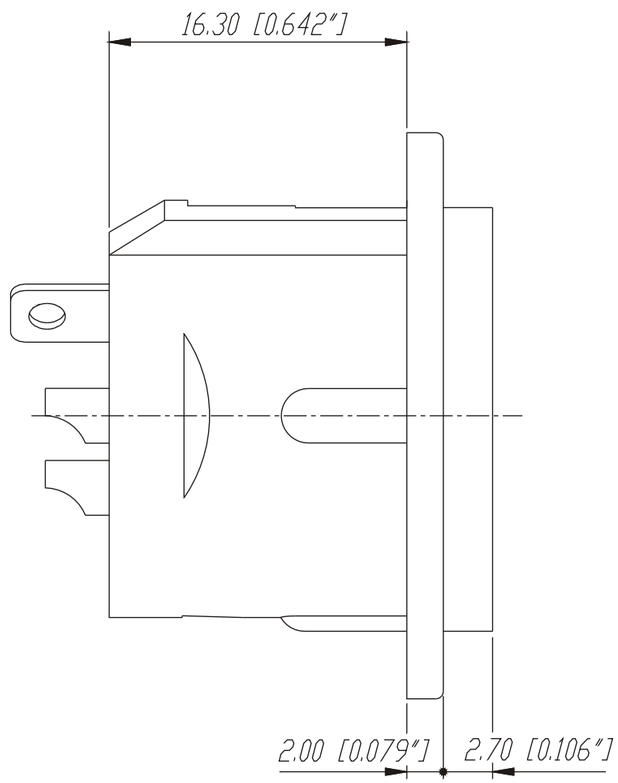
All dimensions in inches unless otherwise noted [bracketed dimensions in millimeters]

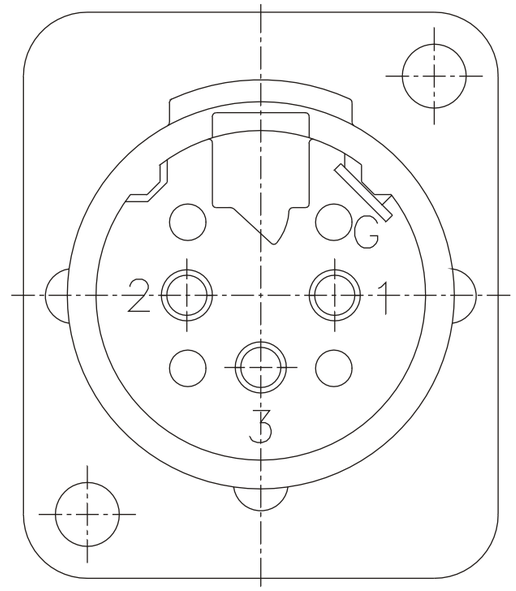
Frontplattenausschnitt (Rückseite)

Panel cut out (rear side)









				*)Lieferant darf ohne Ruecksprache nicht geaendert werden	Werkstoff:	Massstab: 3:1		Datum	Name
							Gezeichnet	06.07.89	Mart.
				Zeichnung urheberrechtlich geschuetzt (DIN 34) (C)			Geprueft		
							Gesehen		
				Benennung: NC3MDL-1			Ersetzt durch:		Blatt
C	Aktuelle Zeichnung	05.03.98	Alinjak				Ersatz fuer:		von Blatt
B	Kontakte gedreht	27.08.97	Dobler	NEUTRIK AG FL-9494 SCHAAN			Zeichn. Nr. 3102 St 10 16		
A	3:1, Toleranzen	11.04.96	Dobler						
Ind.	Aenderung	Datum	Name						

NC3FD-L-B-1

3 pole female receptacle, solder cups, black metal housing, gold contacts

Universal D-size metal body XLR panel mount series. UL recognized component.

Features & Benefits

- Robust "D" metal shell
- Standardized D sized 24 mm panel cutout
- Solder cups on 3 - 7 pole version

Technical Information hide

Product

Title	NC3FD-L-B-1
Connection Type	XLR
Gender	female

Electrical

Capacitance between contacts	≤ 4 pF
Contact resistance	≤ 5 mΩ (inner)
Dielectric strength	1,5 kVdc
Insulation resistance	> 2 GΩ (initial)
Rated current per contact	16 A
Rated voltage	50 V

Mechanical

NC3MD-L-B-1

3 pole male receptacle, solder cups, black metal housing, gold contacts

Universal D-size metal body XLR panel mount series. UL recognized component.

Features & Benefits

- Robust "D" metal shell
- Standardized D sized 24 mm panel cutout
- Solder cups on 3 - 7 pole version

Technical Information show

Accessories

CAS-DUMMY

DBA-BL

DSS-*

MFD

NDM

SCDM

SCDP-*

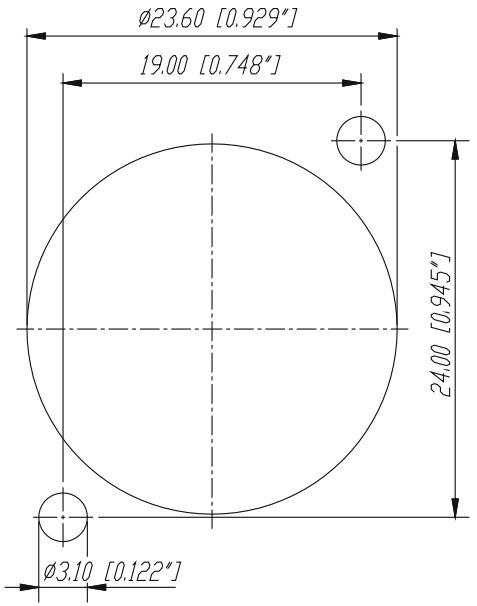
SCDR

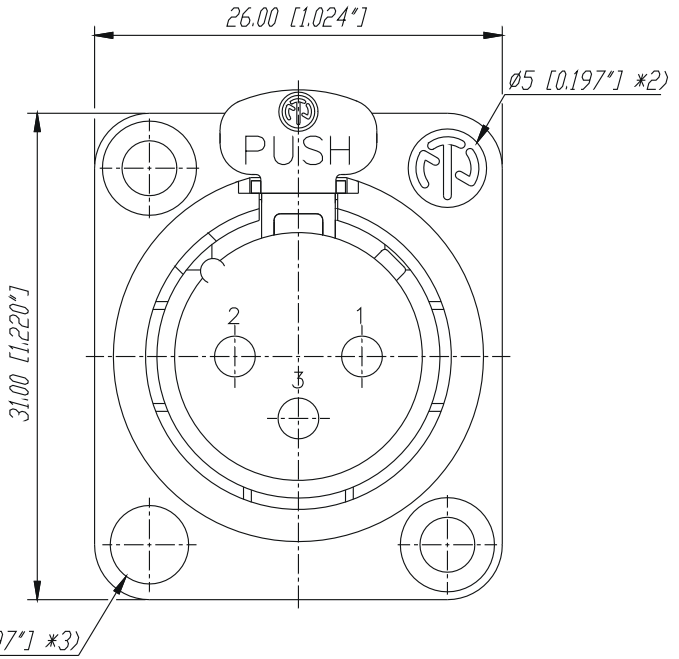
SCDX

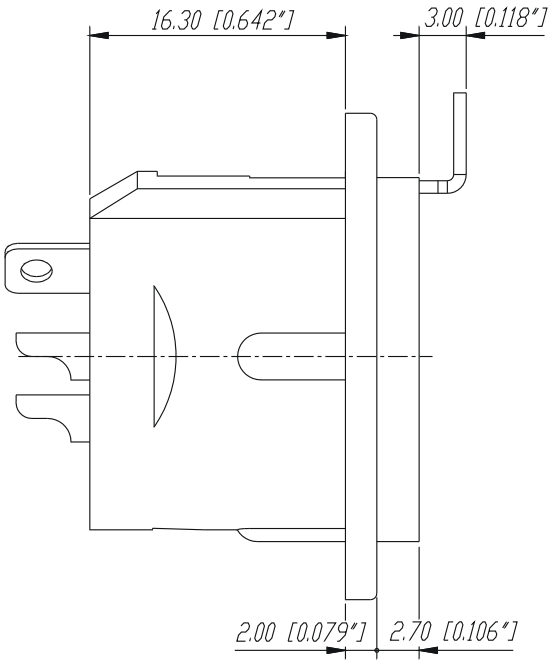
SCM

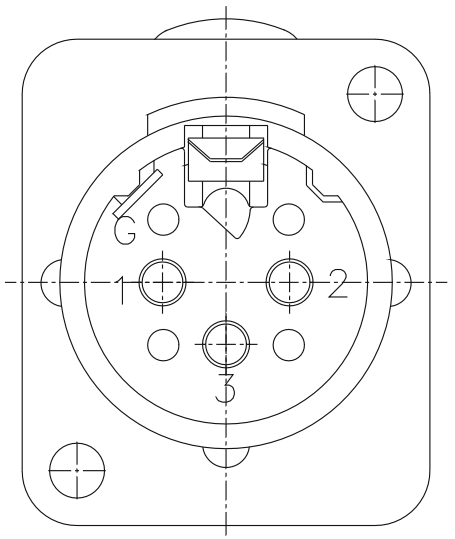
Frontplattenausschnitt (Rückseite)

Panel cut out (rear side)









*2) Feld 0.30 vertieft, Schrift 0.20 erheben
*3) Feld 0.30 vertieft, Verdrehsicherung für Auswerfer mit NT-Zeichen (Option) vorsehen.

B	Aktuelles Gehäuse	27.02.98	Alinjak
A	3:1, Toleranzen	11.04.96	Dobler
Ind.	Aenderung	Datum	Name

*)Lieferant darf ohne Rueecksprache nicht geaendert werden

Zeichnung urheberrechtlich geschuetzt (DIN 34) (C)

Werkstoff:

Massstab: 3:1

	Datum	Name
Gezeichnet	06.07.89	Mart.
Geprueft		
Gesehen		

Benennung: NC3FDL-1

Ersetzt durch:

Blatt

Ersatz fuer:

von Blatt

NEUTRIK AG FL-9494 SCHAAN

Zeichn. Nr. 3102 St 10 10

OPTICOM™ Fiber Optic Rack Mount Enclosure

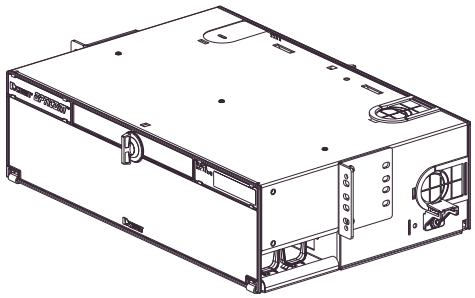
Part Numbers: FRME3, FRME4

INSTRUCTIONS CM271A

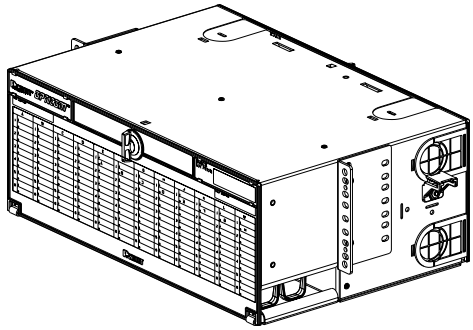
© Panduit Corp. 2004

FRME Enclosure Parts

FRME3
1 FRME Enclosure
1 FRME Kit
1 Port I.D. Label
2 EIA Enclosure Brackets



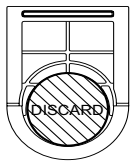
FRME4
1 FRME Enclosure
1 FRME Kit
1 Port I.D. Label
2 EIA Enclosure Brackets



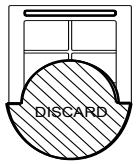
Assembly Instructions:

1. Determine the cable entry location on the enclosure. Remove the knockout by inserting a screwdriver into the slot located in the center of the knockout and apply a twisting upward motion then lift out. Insert grommet following proper cutting diagram. Snap in saddle clips. Grounding Lug attaches to a stud at the rear, inside the enclosure on the top or bottom with a #10-32 nut. Apply Laser Warning Label and Caution Label in a clearly visible location. Apply Port I.D. Label (s) on the inside of the door.

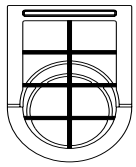
GROMMET CUTTING DIAGRAM



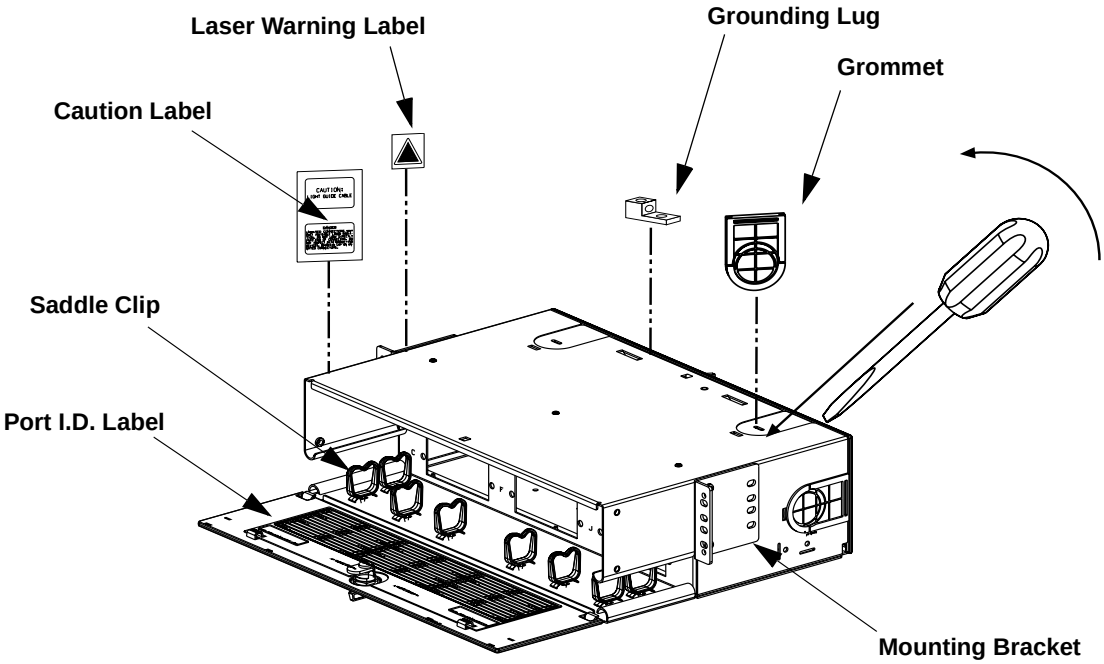
Cut the small circle for 1" diameter innerduct

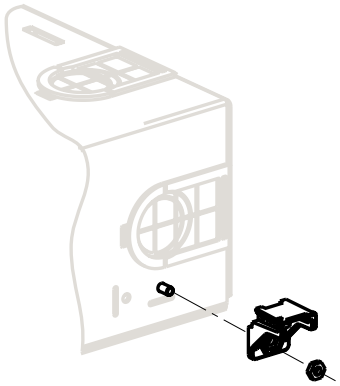


Cut the large circle for 1-1/2" diameter innerduct

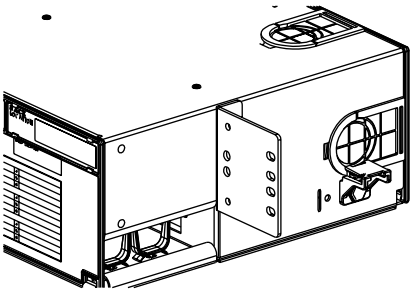


Cut the straight lines when not using any innerduct



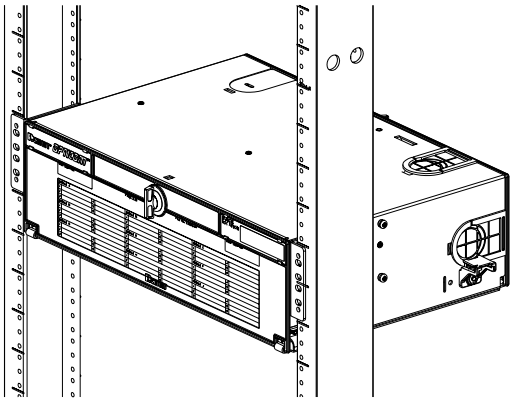


Attach Strain Relief Clip with the #10-32 screw and nut provided.



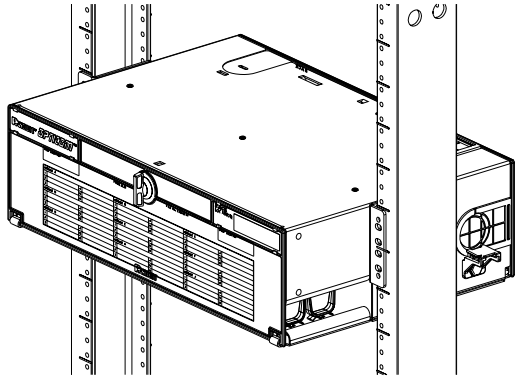
Bracket orientation for 23 inch rack

Attach the short leg of the bracket to the enclosure.



Bracket orientation for flush mount on a 19 inch rack

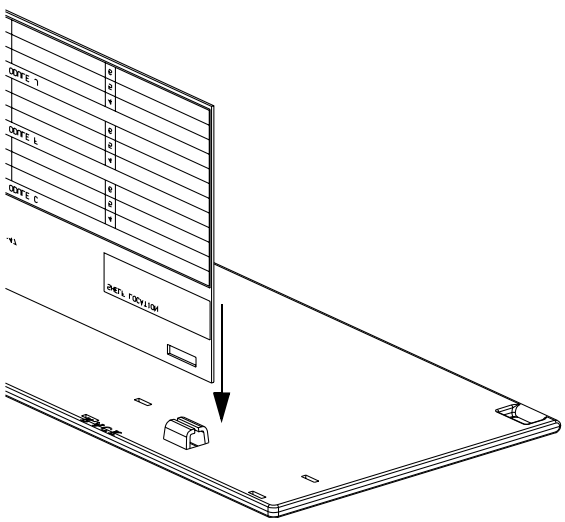
Locate rack bracket on the front mounting holes for flush mounting

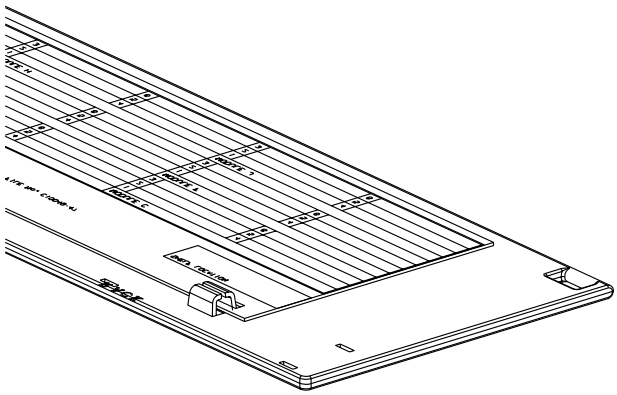


Bracket orientation for projection mount on a 19 inch rack

Locate rack bracket on the mid enclosure mounting holes for projection mounting

Label Installation





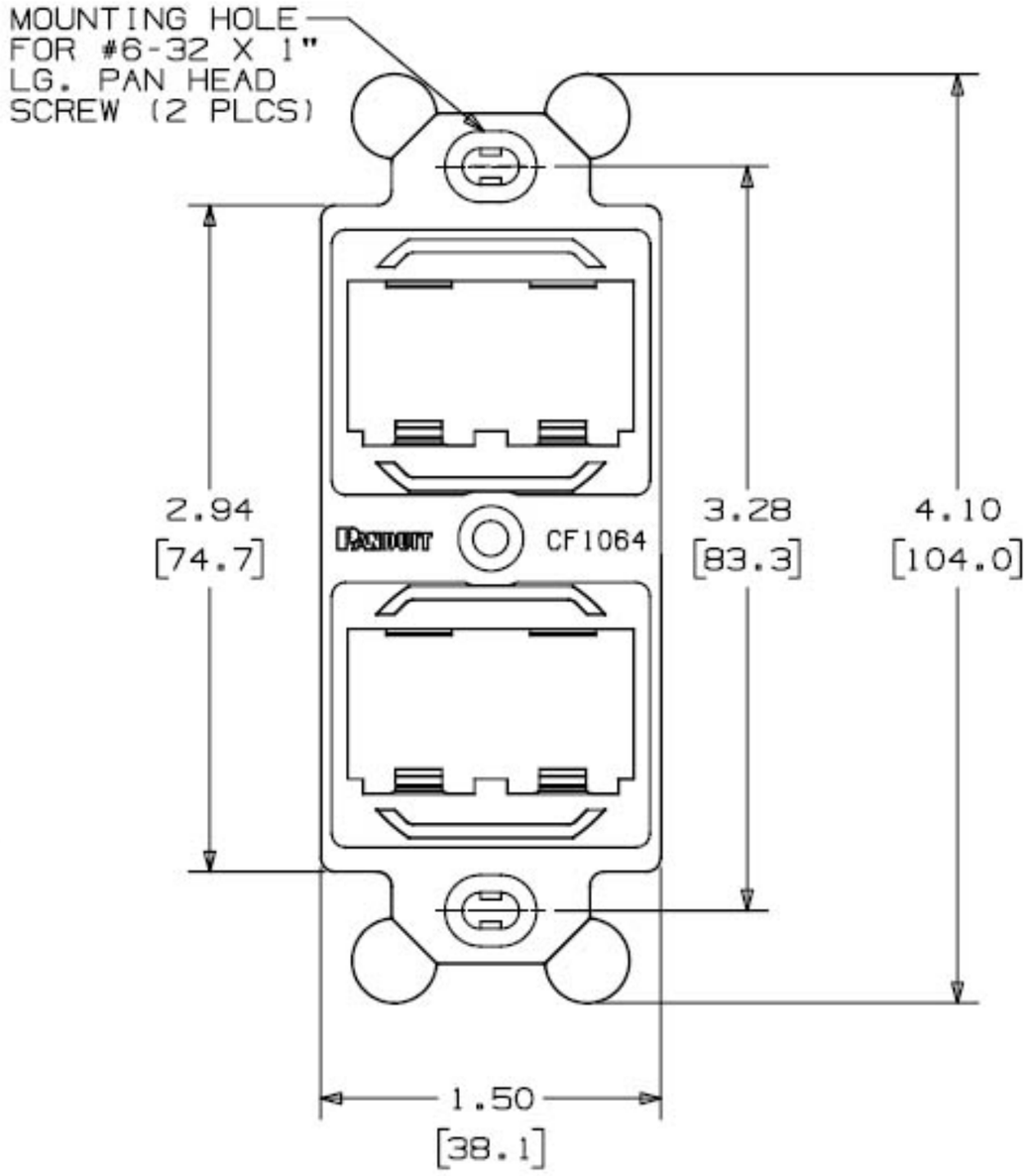
For instuctions in Local Languages and Technical Support:

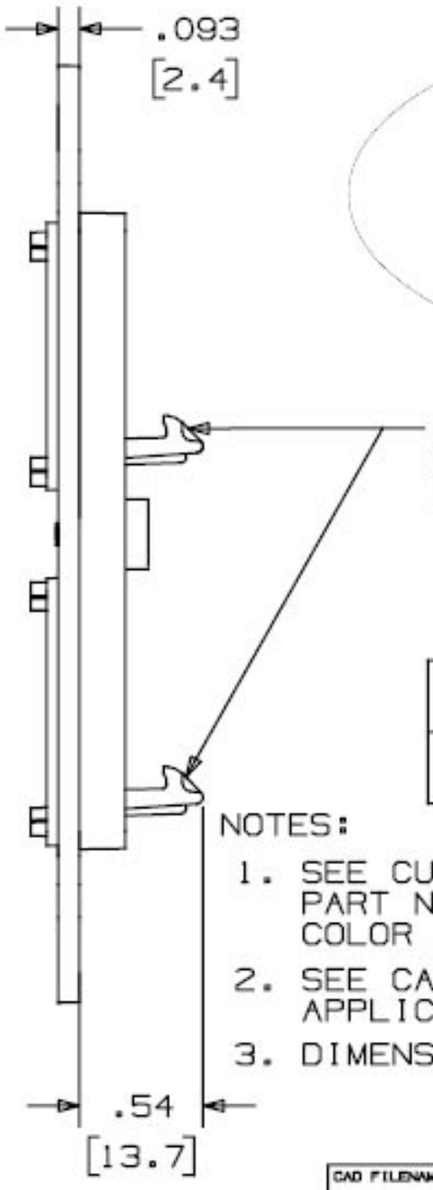
www.panduit.com/resources/install_maintain.asp

www.panduit.com

E-mail:
cs@panduit.com
Fax:
(708)444-6448

THIS COPY IS PROVIDED ON A RESTRICTED BASIS AND IS NOT TO BE USED IN ANY WAY DETRIMENTAL TO THE INTERESTS OF PANDUIT CORP.





Sold by:
TWAcomm.com
http://www.TWAcomm.com
Toll Free: (877) 892-2666

PANDUIT P/N	WEIGHT
CF1064	.29 LB/10 PCS (13 G/10 PCS)

NOTES:

1. SEE CURRENT CATALOG FOR ADDITIONAL PART NUMBER SUFFIXES TO INDICATE COLOR AND OR PACKAGE QUANTITY.
2. SEE CATALOG FOR COMPLETE LIST OF PARTS APPLICABLE FOR USE WITH THIS PART.
3. DIMENSIONS IN PARENTHESES ARE IN METRIC.

REV	DATE	BY	CHK	DESCRIPTION	ECN	CHK	CUST	SUP
1	9-11-97	RCA		A. RE'V DWG TITLE WAS MINI-COM FOUR MOD 106 FRAME.	35544-12			
R	7-11-96	JBA	CEF	RELEASED TO PRODUCTION.	35544-12	CEF		

SECTION A-A

CAD FILENAME/LAYERS: D35544BM_CF1064_C_01

PANDUIT CORP. TINLEY PARK, ILLINOIS

"106" DUPLEX MODULE FRAME (CF1064) CUSTOMER DRAWING

A

UNLESS OTHERWISE SPECIFIED, DIMENSIONAL TOLERANCES ARE:
(.X) ± (.XXX) ±.010(.3)
(.XX) ±.03(.8) ANGLES ±

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE GIVEN IN INCHES, THIRD ANGLE PROJECTION.

DRAWN BY: JBA
DATE: 7-11-96
CHECKED BY: CEF
MAT'L: SEE CHART
SCALE: NONE
DRAWING NO.: 35544-12
SIZE: A

Opticom® Wall Mount Enclosures

- Holds Opticom® Fiber Adapter Panels (FAPs)
- Rugged all metal construction for fiber protection and secure mounting
- Compact design allows installation in tight areas
- Separate doors for service side and user side with optional keyed locks for added security
- Include fiber optic cable routing kit (grommets, cable ties, spools, strain relief bracket and ID/caution labels) for various cable management solutions

FWME2

FWME4

FWME8

Part Number	Part Description	Std. Pkg. Qty.
Fiber Wall Mount Enclosures		
FWME2	Holds up to two QuickNet™ Cassettes, FAP, or FMP panels. Dimensions: 12.00"W x 10.18"H x 2.32"D (304.8mm x 258.6mm x 59.1mm)	1
FWME4	Holds up to four QuickNet™ Cassettes, FAP, or FMP panels. Dimensions: 16.11"W x 12.25"H x 3.52"D (409.2mm x 311.0mm x 89.4mm)	1
FWME8	Holds up to eight QuickNet™ Cassettes, FAP, or FMP panels. Dimensions: 16.11"W x 16.11"H x 5.00"D (409.2mm x 409.2mm x 127.0mm)	1
Fiber Accessories		
FELS	Fiber enclosure lock for service side.	1
FELU	Fiber enclosure lock for user side.	1

All product color is black.
*MTP is a registered trademark of US Conec Ltd.

SmartMount® Articulating Wall Arm

For 22" to 40" LCD Screens

MODELS

Universal Models:

Includes standard hardware (hex or Phillips) for attaching screen to mount

SA740P	High gloss black
SA740P-S	High gloss silver

SCREEN ADAPTER

VESA® pattern

Universal Models: 75, 100, 200 x 100 and 200 x 200 mm

SPECIFICATIONS

Distance from wall

3.3"–20.18" (84-513 mm)

Tilt | Swivel | Roll

+15/-5° | ±90° | ±5°

Max load

80 lb (36 kg)

Product Dimensions (W x H x D)

8.75"-12.75" x 8.75" x 3.3"-20.18" (222-324 x 222 x 84-513 mm)

Mounting Surfaces

Wood stud, concrete, cinder block and metal stud
(Metal stud accessory required)

Ship Weight

8.45 lb (3.8 kg)

CERTIFICATIONS

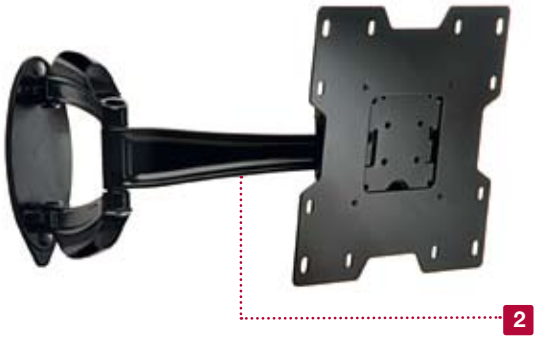
ACCESSORIES

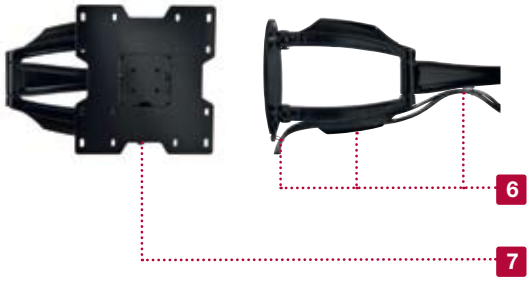
ACC919:
Security Fasteners ..... pg# 132

WSP700:
Metal Stud Wall Plate for 16" Center Metal Studs ... pg# 130

WSP701:
Metal Stud Wall Plate for 20" and 24" Center Metal Studs .. pg# 130

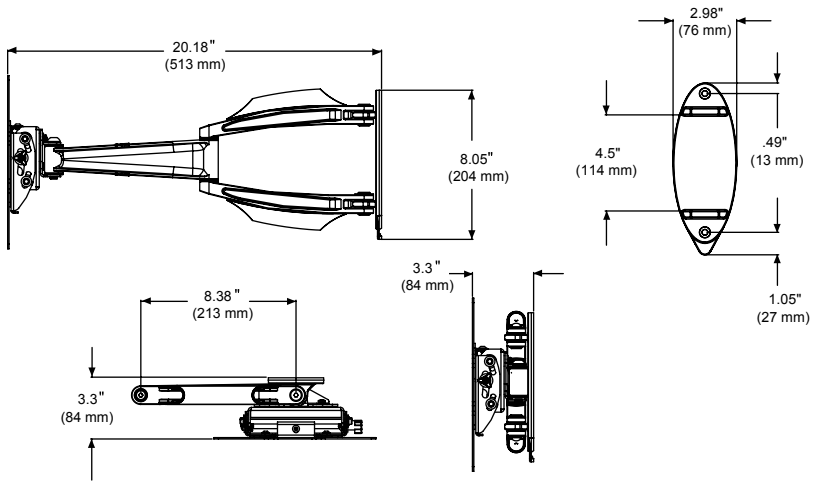
1. VESA® 75, 100, 200 x 100 and 200 x 200 mm compliant
2. Arm extends up to 20.18" (513 mm) from wall
3. One-touch tilt allows adjustment of +15/-5° without the use of tools
4. Up to ±90° of side-to-side swivel
5. ±5° of roll to level screen horizontally
6. Built-in cable management keeps cables and cords out of the way
7. Screen is centered on wall plate
8. Non-VESA® adapter plates also available





TECHNICAL DRAWINGS

For expanded product information and technical data visit www.peerlessmounts.com



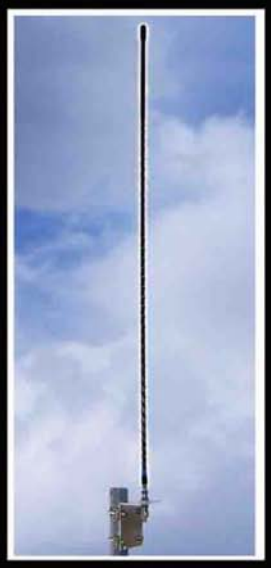
Pixel TECHNOLOGIES

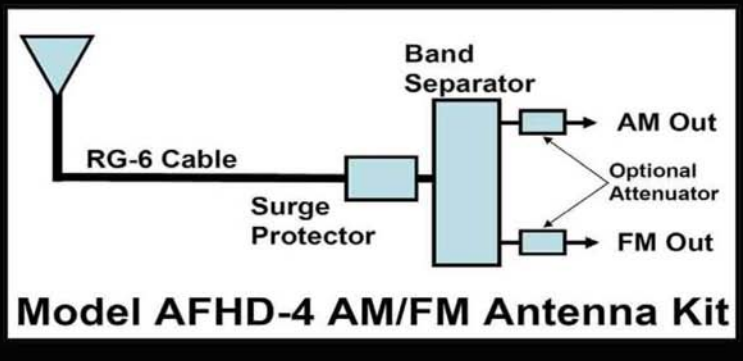
Need Great AM/FM and HD Radio Reception?

Photo Courtesy of the NAIC - Arecibo Observatory, a facility of the NSF

Pixel's Got the Antenna for You!

Actually, that antenna is not for sale, but Pixel Technologies has got a good alternative that delivers best in class AM/FM & HD Radio reception over a single RG-6 cable. Designed for easy outdoor or attic installation with rugged pro-quality construction, this low profile omni-directional antenna will bring out the best performance from any receiver.





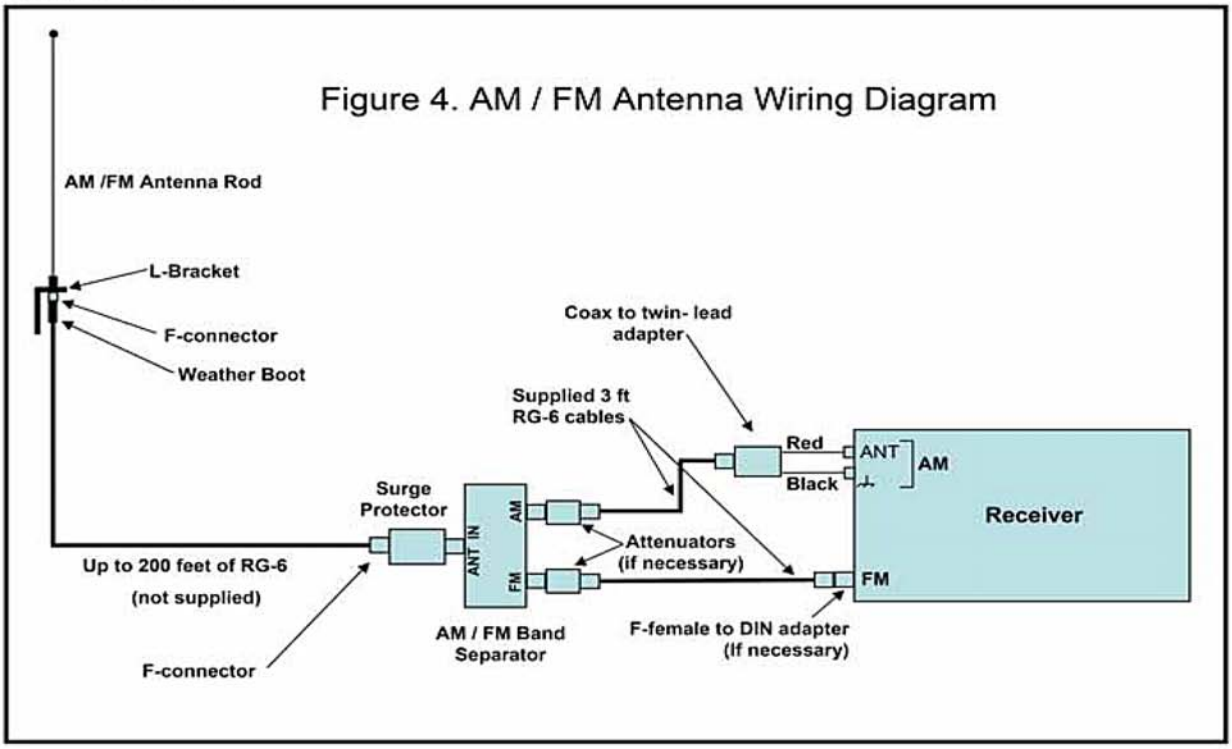
Model AFHD-4 AM/FM Antenna Kit

Pixel Technologies Incorporated
14828 W 6th Avenue, Unit 3B, Golden, CO 80401
Ph: 303-526-1965 Fax: 303-526-7368

www.PixelSatRadio.com **sales@PixelSatRadio.com**

© Pixel Technologies Inc. 2011

Model AFHD-4



Specifications:

Antenna length: 48 inches
Frequency of Operation:
AM Band 500 KHz to 1750 KHz
FM Band 88MHz -108 MHz
Ground plane required: None
AM capture length: 300 inches

AM / FM Band Separator Performance:
FM rejection in AM band: > 50 dB
AM rejection in FM band: > 60 dB
AM/FM Pass-band loss: < 1dB
AM load impedance: 300 ohms
FM load impedance: 75 ohms
Antenna Beam Width: Omni-directional

Reception Performance:
These results will vary as function of the antenna's height above ground, the power of transmitting station, the transmitter's antenna beam pattern, the local terrain and the quality of the receiver utilized. Table 1 shows actual reception test results for the antenna mounted 20 feet above ground over flat terrain, using a Sangean Model HDT-1X as the receiver with 200 ft of cable between the antenna and receiver.

Table 1. Reception Capability

Receive Mode	Reliable Good Quality Daytime Reception
FM Stereo	80 Miles
FM HD	50 Miles
AM (Mono)	90 Miles
AM HD	50 Miles

Test Conditions:

Receiver:	Sangean HDT-1X
Cable Length (antenna to receiver):	200 feet RG-6 cable
Antenna height above ground:	20 feet
Terrain:	Flat

Items Included in Kit

QTY	Description
1	AM / FM antenna
1	L-mounting bracket
1	Weather boot
1	Surge protector
2	20 dB attenuator
2	10 dB attenuator
2	3 ft RG-6 cables
1	AM/FM band separator
2	U bolts with washers and nuts
2	Pole mount saddle brackets
4	Mounting screws with plastic inserts
1	F-Female to twin lead adaptor

Pixel Technologies Incorporated
14828 W 6th Avenue, Unit 3B, Golden, CO 80401
Ph: 303-526-1965 Fax: 303-526-7368
www.PixelSatRadio.com **sales@PixelSatRadio.com**
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AM / FM Expansion Kit

Model: AF Kit

For use with Model: AFHD-4 AM / FM Antenna.

Provides required components to add one additional AM / FM receiver to an AFHD-4 AM / FM antenna. Requires the addition of a splitter (MBS-2 or MBS-4).

Kit Includes:

(1) AM Twin Lead Adapter
(1) F-Male to DIN Adapter
(1) Surge Protector and AM / FM Band Separator
(2) 10 dB Attenuators
(2) 20 dB Attenuators
(2) 3 ft RG-59 Cables

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Ultra Wide Band Line Amplifier for AM, FM, HD Radio, Over- the- Air TV, TV, and Satellite Radio

Model: MBA-12

As opposed to standard line amps, this unit has been specially designed to amplify signals from the bottom of the AM broadcast band (500 kHz) to beyond the top of the satellite radio band (2.4 GHz). With such a wide pass-band it is very useful for overcoming splitter and cable losses in whole-house and commercial RF coaxial cable distribution networks for signals used in all types of entertainment systems.

It is also designed to pass DC from its input port to its output port.

It can be used in tandem with Model MBS-4 ultra-wide-band splitter to implement lossless splitters.

Frequency Range: 500 KHz - 2.4 GHz
Typical Gain: 12 dB
Operating Voltage: 5-12 VDC
Current Consumption: 50 ma @ 5 VDC, 95 ma @ 12 VDC
Max Noise Figure: 3.5 dB
Max Output (Satellite Radio Band): 10 dBm
Max Output (AM/FM, UHF TV Bands): 5 dBm
DC power passing in both directions

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Signal Splitters

Wide Band 2-Way Passive Splitter

Model: MB-2

Splitter covers 500 kHz to 2.4 GHz. (One port power passing). Loss: 3.5 dB.

Wide Band 4-Way Passive Splitter (For AM/FM, HD Radio, Broadcast TV, Cable TV, and Satellite Radio)

Model: MBS-4

As opposed to standard splitters, this signal splitter has been specially designed to pass, with low-loss, signals from the bottom of the AM broadcast band (500 kHz) to beyond the top of the satellite radio band (2.4 GHz). With such a wide pass-band it is very useful for implementing whole-house and commercial RF distribution networks of signals used in all types of entertainment systems.

It is also designed to pass DC from any of its output ports to the input port via protection diodes that prevent DC feedback.

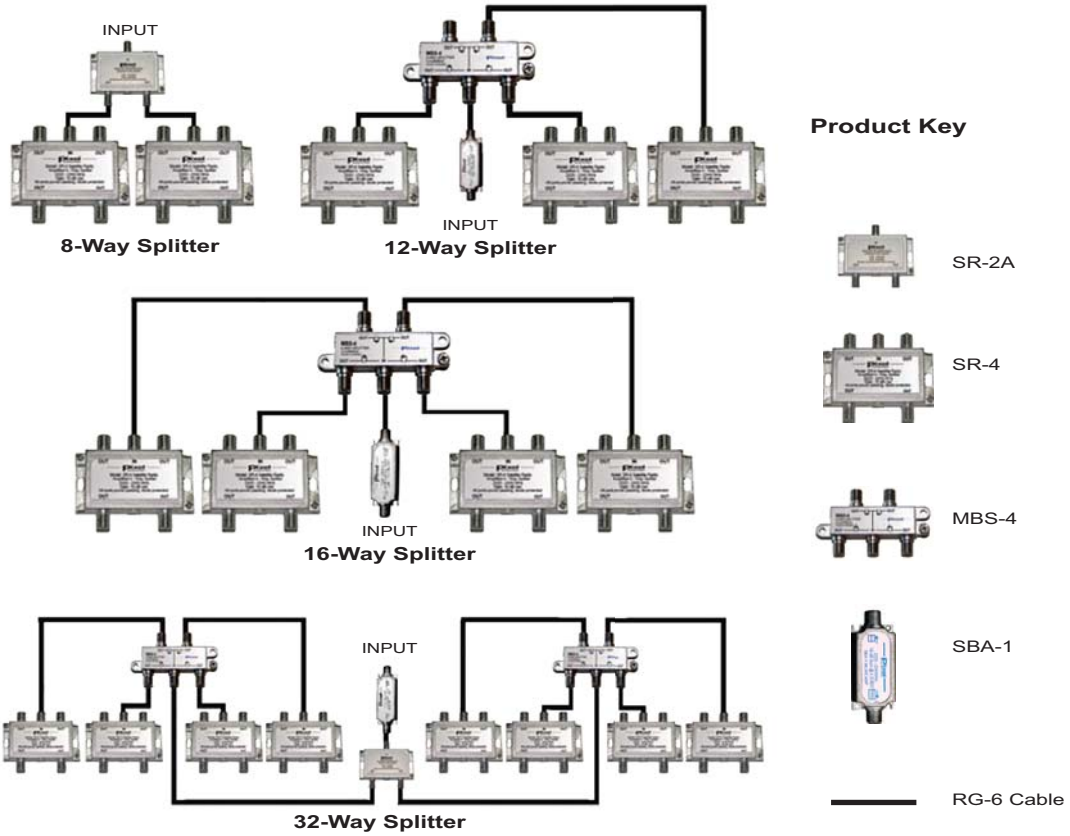
It can be used in tandem with model MBA-12 ultra-wideband amplifier to implement a lossless splitter.

Insertion loss: 12 dB
Diode Protection: All Ports

This splitter is not recommended for use in stand-alone satellite radio splitter configurations without additional external amplification and DC impedance terminations (for XM applications).

Make Complex Splitters with Easy-to-Use Building Blocks

Combine SR-4 Splitters in Multiple Radio Systems



Distribution Accessories

AM / FM Expansion Kit

Model: AF Kit

For use with Model: AFHD-4 AM / FM Antenna.

Provides required components to add one additional AM / FM receiver to an AFHD-4 AM / FM antenna. Requires the addition of a splitter (MB-2 or MBS-4).

Kit Includes:

(1) AM Twin Lead Adapter
(1) F-Male to DIN Adapter
(1) Surge Protector and AM / FM Band Separator
(2) 10 dB Attenuators
(2) 20 dB Attenuators
(2) 3 ft RG-59 Cables

AM / FM, Satellite Radio & Broadcast TV Triplex Combiner

Model: TPLEX

Combines the output of an AM / FM antenna, satellite radio antenna, and television antenna (for channels 7 and higher) onto a single coax cable. Contains a 9 dB satellite radio amplifier. Requires 5 VDC on the coax cable to power the amplifier. Recommended for use with Pixel satellite radio and AM / FM antennas

AM / FM, Satellite Radio & Broadcast TV De-Multiplex Kit

Model: QPLEX

Provides required components to add one additional AM / FM, Satellite Radio and Broadcast TV receiver (for channels 7 - 69) to a AFXSM-6 antenna kit.

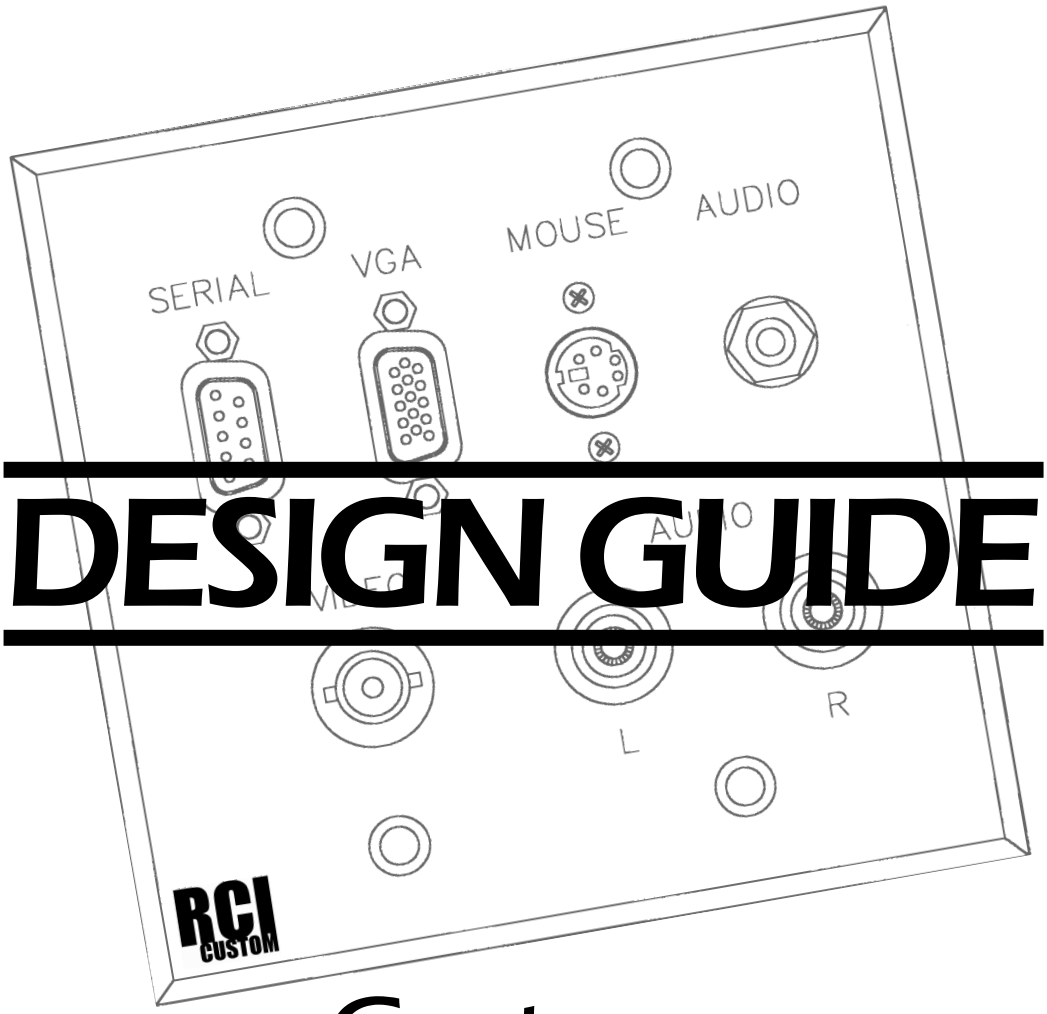
Requires the addition of a splitter (MBS-4).

Includes:

(1) Quadplexer Assembly
(1) AM Twin Lead Adapter
(1) F-Male to DIN Adapter
(1) 3' F36SMB 90 degree cable
(1) AF-71G: F-Male splice
(1) 20 dB Attenuator

RCI CUSTOM

Custom Products



DESIGN GUIDE

Custom Plates and Panels

www.rcicustom.com

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Presenting the RCI Custom Design Guide.

Simple and easy to use, the new RCI Custom Design Guide has been created through the suggestions, comments, and input of the many contractors and systems design engineers who rely on RCI Systems every day for what we really are - a "Custom Solutions" company.

Our design guide is set up to cater to the A/V contractors more common need for customized audio and video products. Easy step by step instructions, custom design templates and parts legends, and our experienced Customer Service Department will help you to create the perfect plate or panel every time.

Use this booklet as a catalyst for your own creativity. Some of our most successful standard products have been created from an idea for either improving an available product, or developing something new to solve an existing problem. With custom metal processing, unlimited custom finishes, rack mount chassis, and engraving and silk screening services all available under one roof, almost anything is possible!

RCI wants to be the company you think of first for **any custom audio or video need.** While it is well known that we specialize in custom wall plates and rack panels, we welcome the opportunity to help you engineer, design, and fabricate just about any audio or video product you may need.

RCI Custom Products - your one stop "Custom Solution" shop!

Updates On The Web!

Get the most current version of the RCI Custom Design Guide by downloading it from the World Wide Web. It's Fast, Free and Easy!

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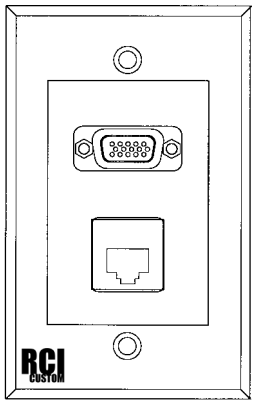
1/99

Custom Design and Layout

The following custom design section was created as an aid to the more common need for custom audio and video plates and panels. Blank plate and panel design templates are provided, along with drawings of several of the most commonly used connectors and devices to help you throughout the design process.

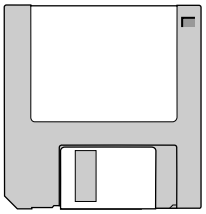
HERE'S WHAT YOU DO.



- Make copies of the pages with blank plates and parts on them.
- Draw or trace the desired device onto the copy of the selected blank plate or panel, or —
- Cut and paste the desired device onto the copy of the selected blank plate or panel.
- Indicate the quantity, series, engraving, and finish requirements for each particular plate.
- Add any graphics information (i.e., logo placement or specialty graphics)
- Fax your drawing to RCI for a quote.

IT'S THAT SIMPLE!

Computer Design



For those systems design consultants and established customers who prefer to create their custom plates and panels by computer, you may qualify for our CAD drawing files package. Please contact your local RCI Custom Products Sales Representative, or call RCI Customer Service at 1-800-546-4724 for details.

RCI Graphics

Add your company name, logo, service phone number or other information to your finished product, even on orders as small as five pieces! See page 4 for details
on how easy it is to use silk screening, engraving and electro luminescence.
Screen charges and per piece costs are available in our price list as well as by quote.

Custom Wiring

RCI can deliver your plates and panels complete with pigtails or pre-wired to connectors, ready for easy installation. Save time and money associated with labor costs by letting RCI's skilled technicians do the work for you. Simply provide your wiring requirements in writing and we'll do the rest.

For other wire or cable needs, consult our full line catalog or call an RCI Customer Service Representative at 800-546-4724.

RCI CUSTOM **Custom Products**

For catalogs, literature, and the most current product information available, call or visit our website at:

www.rcicustom.com • 800-546-4724

Customize and identify your finished product with your company name or logo.

GRAPHICS

Graphics and text are the most obvious and notable custom option available to our customers. Professionally created and produced graphics add a "pro" touch to any plate or panel — a touch that says "quality" to the end user.

Use graphics in the form of engraving, silk screening, or illumination through electro luminescence. Graphics can be used to show the functionality of any plate or panel, to distinctly identify a project, or to subtly advertise your business with the display of your company logo, name, service contact information, or phone numbers.

Graphics and text are affordable even in small quantities, and can be added to nearly any custom product produced at RCI. Choose the graphics option that best suits your particular project, and let RCI do the rest!

Engraving

- Most cost effective for small runs or orders with changing or progressive graphic requirements.
- Permanent and durable
- Multiple font choices, as well as Braille available

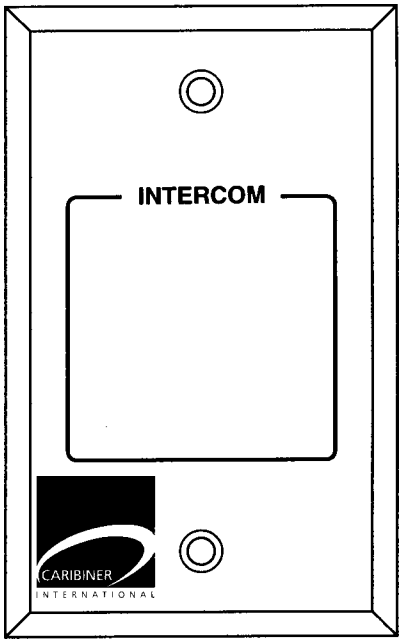
* Appropriate for basic logo reproduction

Silk Screening

- Most cost effective for large runs or similar product
- Consistent professional appearance
- Quick production time
- Excellent reproduction of complex and multicolored logos

Illumination / Electro Luminescence

- Clearly visible graphics in low light areas
- Perfect for theatres, conference & meeting rooms, production studios, etc.
- E.L. lamps far out last incandescent bulbs
- Can be powered with AC or DC voltage



IT'S EASY TO CUSTOMIZE!

Simply send us your camera ready artwork (1:1 ratio or higher), and we'll do the rest! If you don't have camera ready art, call us for help. Graphics or text can be added to your order through RCI graphics services, at an additional cost. Single and multi-colored logo reproductions are welcome!

For Updates & Catalog Info ... **www.rcicustom.com**

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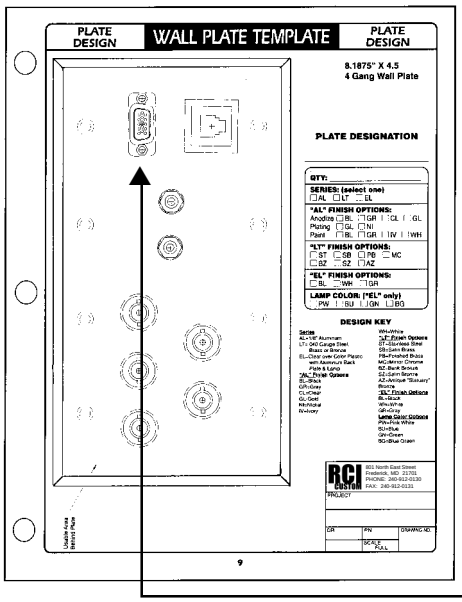
LAYOUT INSTRUCTIONS

PLATE & PANEL DESIGN GUIDE

STEP 1.

Make copies of wall plates and <u>full scale</u> symbols located on pages 10 & 11.



STEP 2.

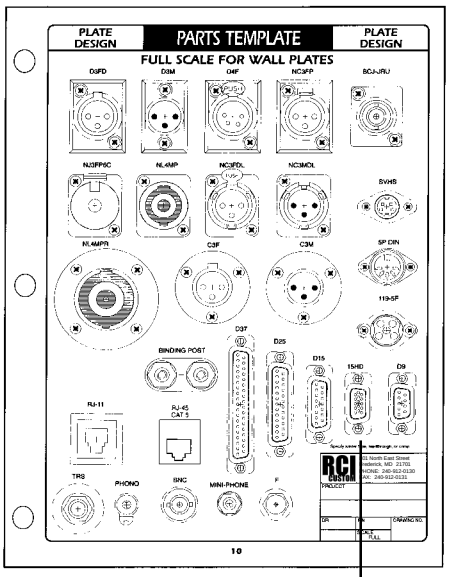
<u>Trace or Paste</u>

Place the symbol page under the copy of the wall plate and trace the devices on the blank plate at the desired location

<u>OR</u>

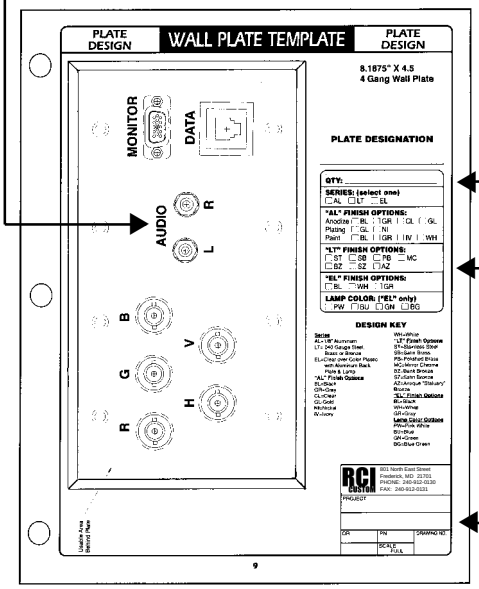
cut out the appropriate devices from the copy of the symbol page and paste them on the blank plate at the desired location.

Be sure to note device sizes and usable area of wall plate.



STEP 3.

Write in text to be engraved on plate. If the plate has multiple quantities, indicate subsequent engraving.

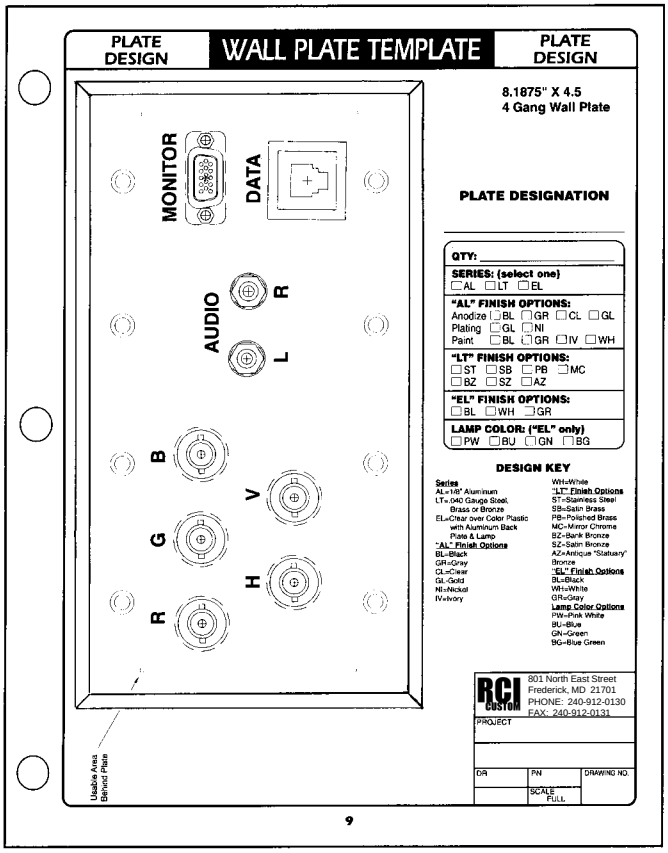


STEP 4.

Indicate plate designation, quantity, finish type, and any other additional engraving or silkscreening requirements. Fill title block with appropriate information, if desired.

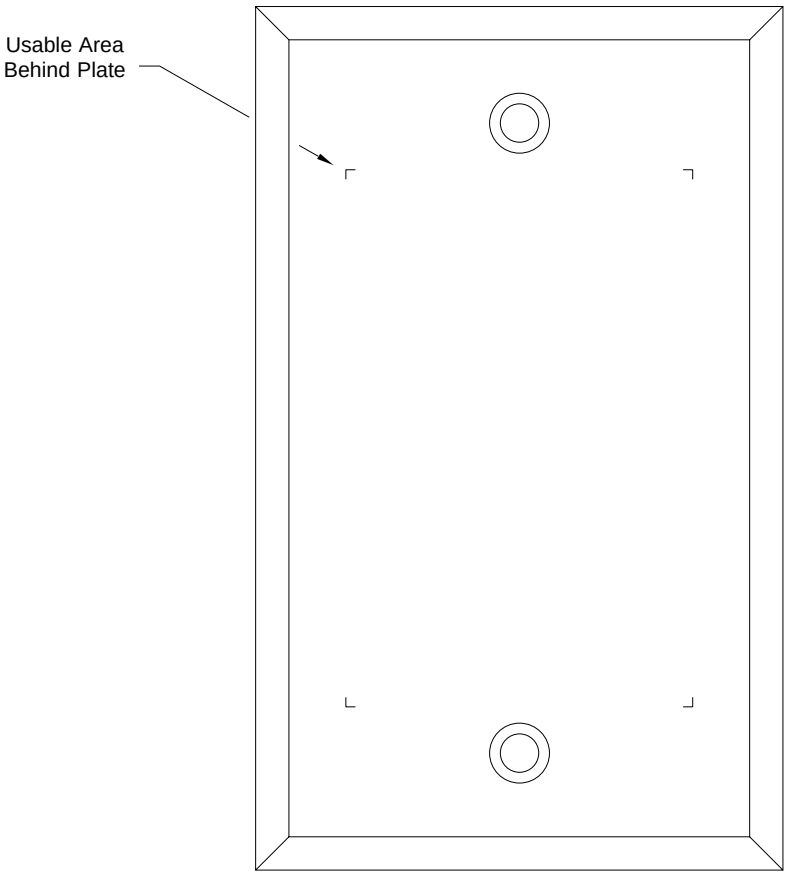
STEP 5.

Fax completed plate design to our AVD Sales Department for quotation.



WALL PLATE TEMPLATE

PLATE DESIGN



2.75" X 4.5
1 Gang Wall Plate

PLATE DESIGNATION

DESIGN KEY

Series
AL=1/8" Aluminum
LT=.040 Gauge Steel,
Brass or Bronze
EL=Clear over Color Plastic with
Aluminum Back Plate & Lamp

"AL" Finish Options
BL=Black
GR=Gray
CL=Clear
GL-Gold
NI=Nickel
IV=Ivory
WH=White

"LT" Finish Options
ST=Stainless Steel
SB=Satin Brass
PB=Polished Brass
MC=Mirror Chrome
BZ=Bank Bronze
SZ=Satin Bronze
AZ=Antique "Statuary" Bronze

"EL" Finish Options
BL=Black
WH=White
GR=Gray

Lamp Color Options
PW=Pink White
BU=Blue
GN=Green
BG=Blue Green

QTY: _____

SERIES: (select one)
☐ AL ☐ LT ☐ EL

"AL" FINISH OPTIONS:
Anodize ☐ BL ☐ GR ☐ CL ☐ GL
Plating ☐ GL ☐ NI
Paint ☐ BL ☐ GR ☐ IV ☐ WH

"LT" FINISH OPTIONS:
☐ ST ☐ SB ☐ PB ☐ MC
☐ BZ ☐ SZ ☐ AZ

"EL" FINISH OPTIONS:
☐ BL ☐ WH ☐ GR

LAMP COLOR: ("EL" only)
☐ PW ☐ BU ☐ GN ☐ BG

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PROJECT

DR	PN	DRAWING NO.
	SCALE FULL	

WALL PLATE TEMPLATE

PLATE DESIGN

4.5" X 4.5
2 Gang Wall Plate

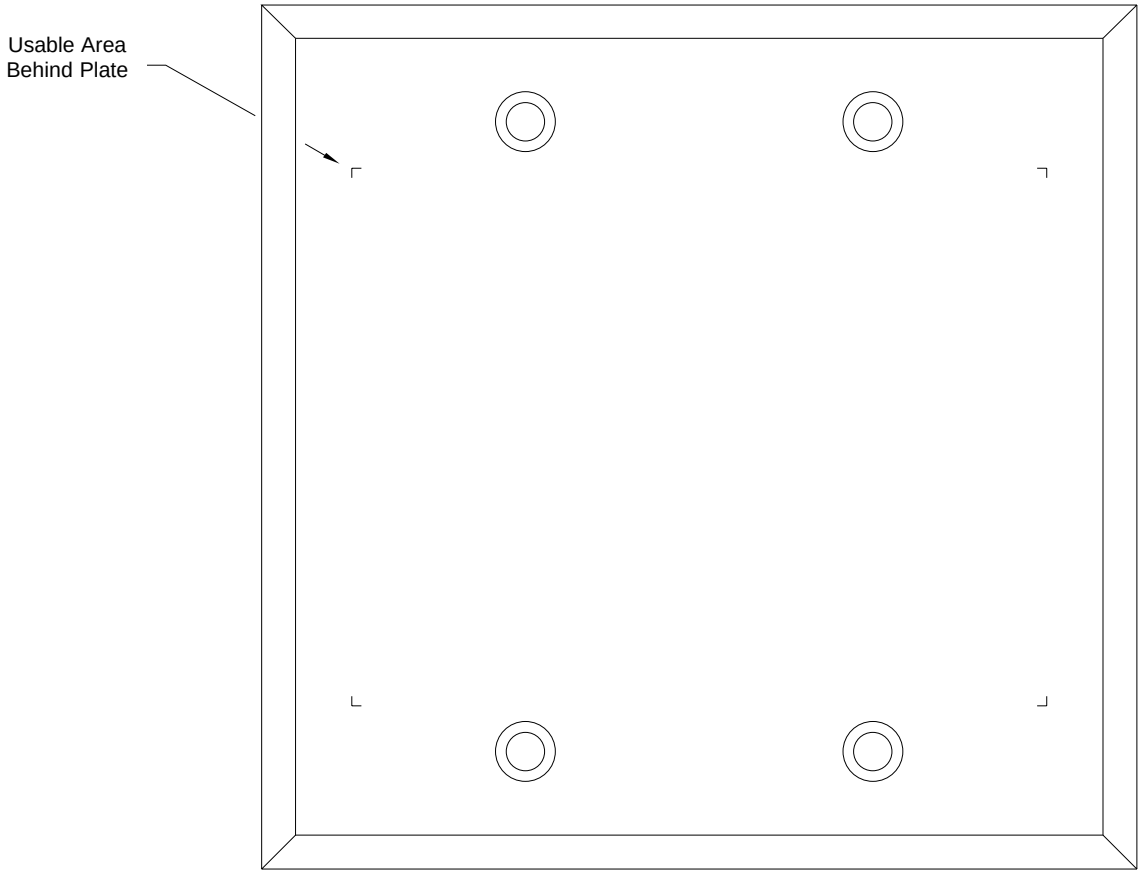

PLATE DESIGNATION

DESIGN KEY

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LT=.040 Gauge Steel,
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"EL" Finish Options
BL=Black
WH=White
GR=Gray

Lamp Color Options
PW=Pink White
BU=Blue
GN=Green
BG=Blue Green

QTY: _____

SERIES: (select one)
☐ AL ☐ LT ☐ EL

"AL" FINISH OPTIONS:
Anodize ☐ BL ☐ GR ☐ CL ☐ GL
Plating ☐ GL ☐ NI
Paint ☐ BL ☐ GR ☐ IV ☐ WH

"LT" FINISH OPTIONS:
☐ ST ☐ SB ☐ PB ☐ MC
☐ BZ ☐ SZ ☐ AZ

"EL" FINISH OPTIONS:
☐ BL ☐ WH ☐ GR

LAMP COLOR: ("EL" only)
☐ PW ☐ BU ☐ GN ☐ BG

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PROJECT

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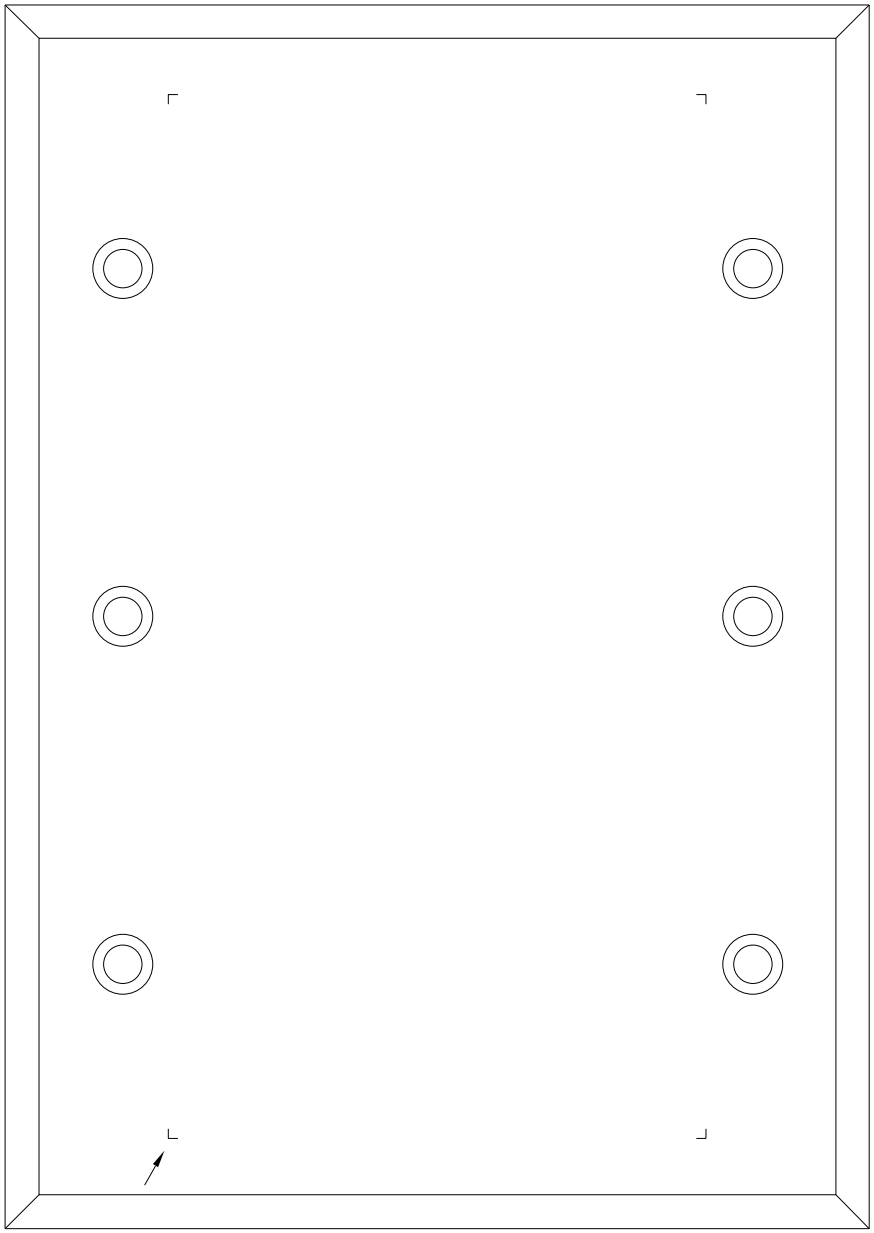
	SCALE FULL	

WALL PLATE TEMPLATE

PLATE DESIGN

6.375" X 4.5
3 Gang Wall Plate



Usable Area Behind Plate

PLATE DESIGNATION

QTY: _____

SERIES: (select one)
☐ AL ☐ LT ☐ EL

"AL" FINISH OPTIONS:
Anodize ☐ BL ☐ GR ☐ CL ☐ GL
Plating ☐ GL ☐ NI
Paint ☐ BL ☐ GR ☐ IV ☐ WH

"LT" FINISH OPTIONS:
☐ ST ☐ SB ☐ PB ☐ MC
☐ BZ ☐ SZ ☐ AZ

"EL" FINISH OPTIONS:
☐ BL ☐ WH ☐ GR

LAMP COLOR: ("EL" only)
☐ PW ☐ BU ☐ GN ☐ BG

DESIGN KEY

Series
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"EL" Finish Options
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GR=Gray

Lamp Color Options
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BU=Blue
GN=Green
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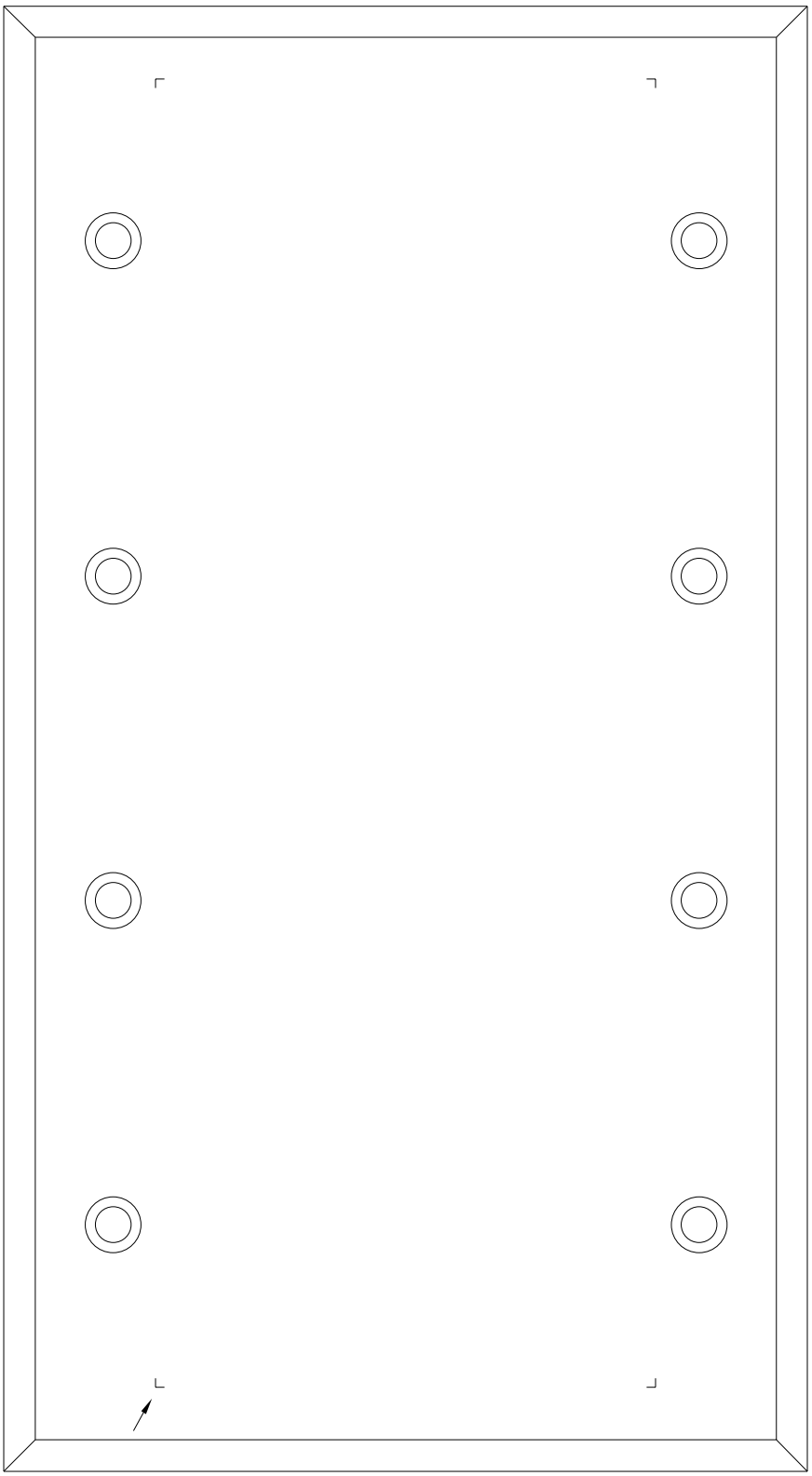
PROJECT

DR	PN	DRAWING NO.
	SCALE FULL	

WALL PLATE TEMPLATE

PLATE DESIGN



Usable Area Behind Plate

8.1875" X 4.5
4 Gang Wall Plate

PLATE DESIGNATION

QTY: _____

SERIES: (select one)
☐ AL ☐ LT ☐ EL

"AL" FINISH OPTIONS:
Anodize ☐ BL ☐ GR ☐ CL ☐ GL
Plating ☐ GL ☐ NI
Paint ☐ BL ☐ GR ☐ IV ☐ WH

"LT" FINISH OPTIONS:
☐ ST ☐ SB ☐ PB ☐ MC
☐ BZ ☐ SZ ☐ AZ

"EL" FINISH OPTIONS:
☐ BL ☐ WH ☐ GR

LAMP COLOR: ("EL" only)
☐ PW ☐ BU ☐ GN ☐ BG

DESIGN KEY

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"EL" Finish Options
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WH=White
GR=Gray

Lamp Color Options
PW=Pink White
BU=Blue
GN=Green
BG=Blue Green

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PROJECT		
DR	PN	DRAWING NO.
	SCALE FULL	

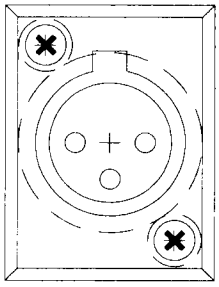
PLATE DESIGN

PARTS TEMPLATE

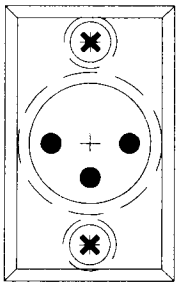
PLATE DESIGN

FULL SCALE FOR WALL PLATES

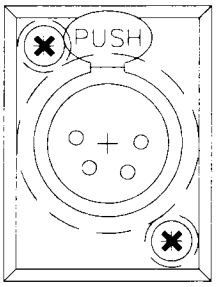
D3FD



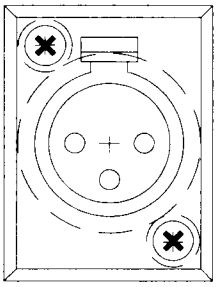
D3M



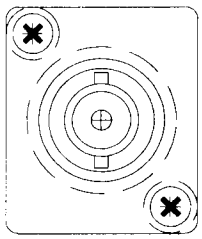
D4F



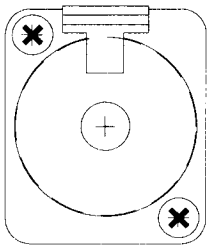
NC3FP



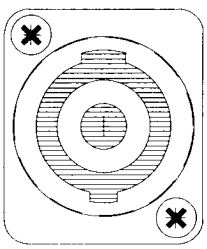
BCJ-JRU



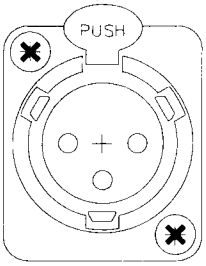
NJ3FP6C



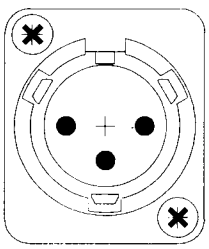
NL4MP



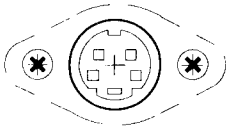
NC3FDL



NC3MDL



SVHS



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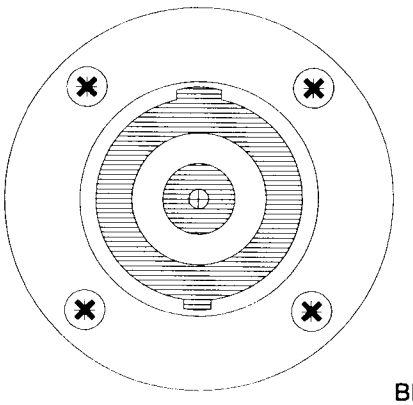
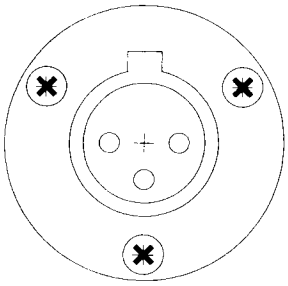
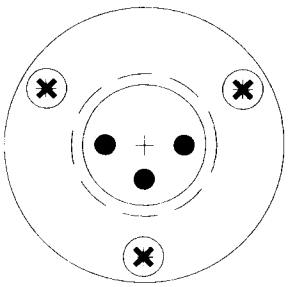


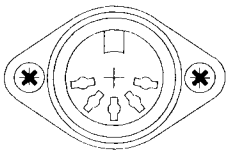
C3F



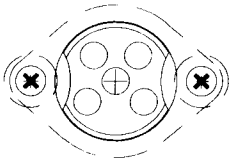
C3M



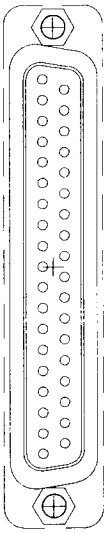
5P DIN



119-5F



D37



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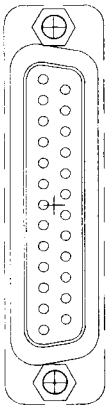
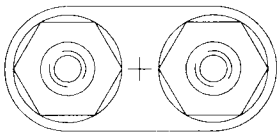


BINDING POST



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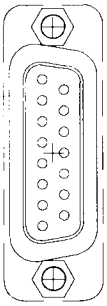
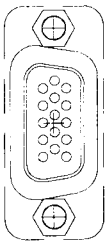


15HD



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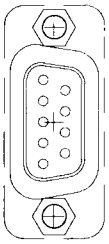
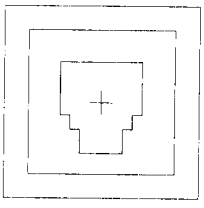
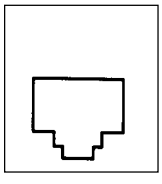


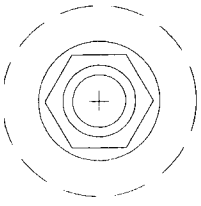
RJ-11



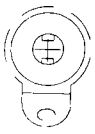
RJ-45
CAT 5



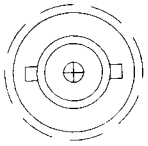
TRS



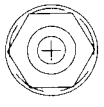
PHONO



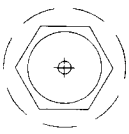
BNC



MINI-PHONE



F



Specify solder type, feedthrough, or crimp.

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PROJECT		
DR	PN	DRAWING NO.
	SCALE FULL	

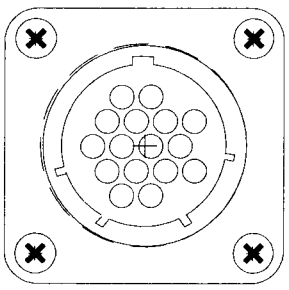
PLATE DESIGN

PARTS TEMPLATE

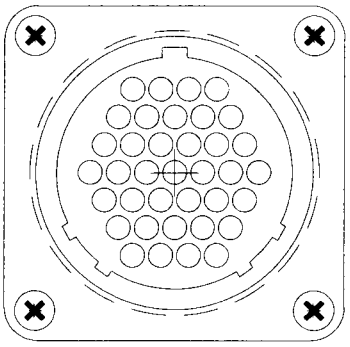
PLATE DESIGN

FULL SCALE FOR WALL PLATES

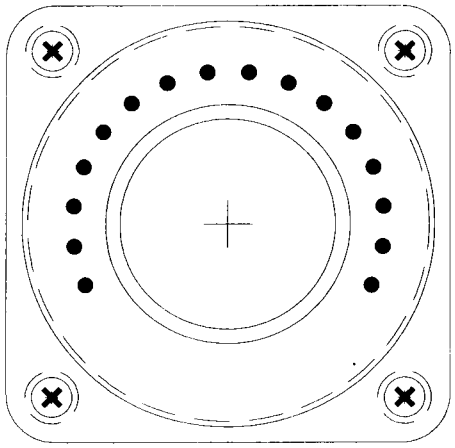
CPC 16



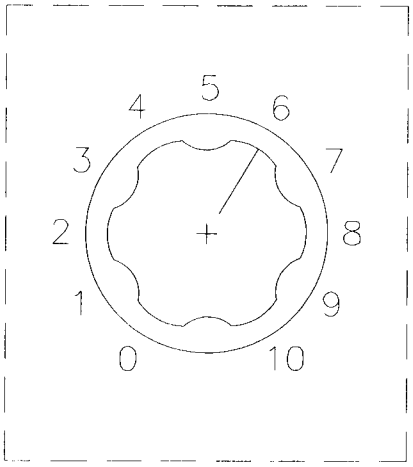
CPC 37



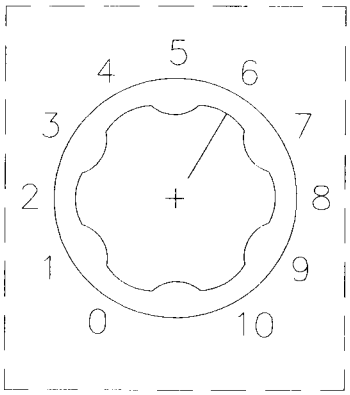
RC-16



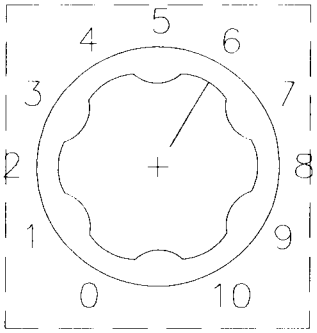
AT-75



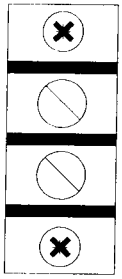
AT-35



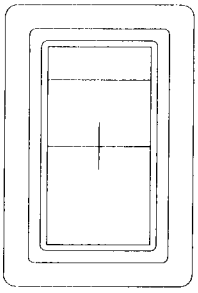
AT-10



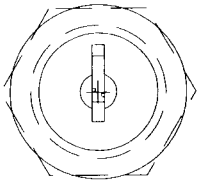
BARRIER STRIP



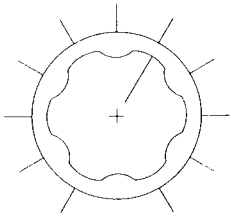
C&K 7201J37



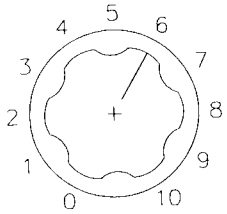
C&K KEY SW



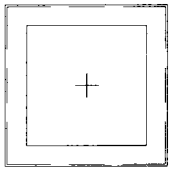
ROTARY SW W/ 7/8" KNOB



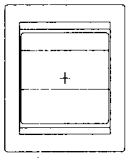
POT W/ 7/8" KNOB



DIALIGHT 554

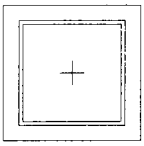


C&K 7201J51

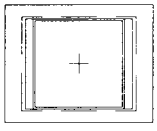


Momentary Pushbutton SPST 903

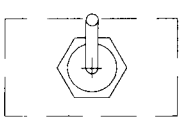
EAO 31



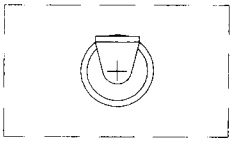
C&K 8121



ALCO MTA



C-H 8373



LED

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PROJECT

DR	PN	DRAWING NO.
	SCALE FULL	

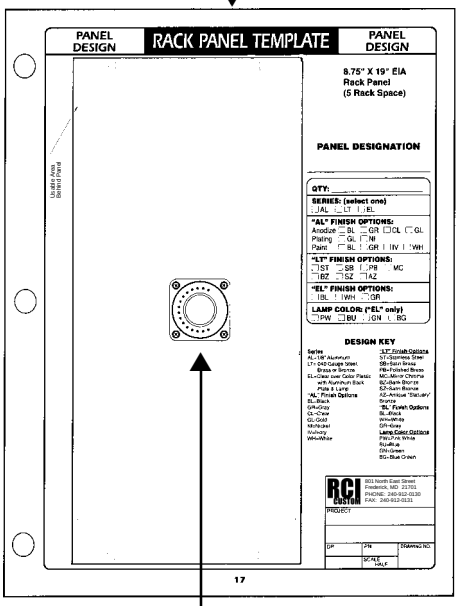
Refer to RCI Custom Catalog pages 24-27 for additional connector options.

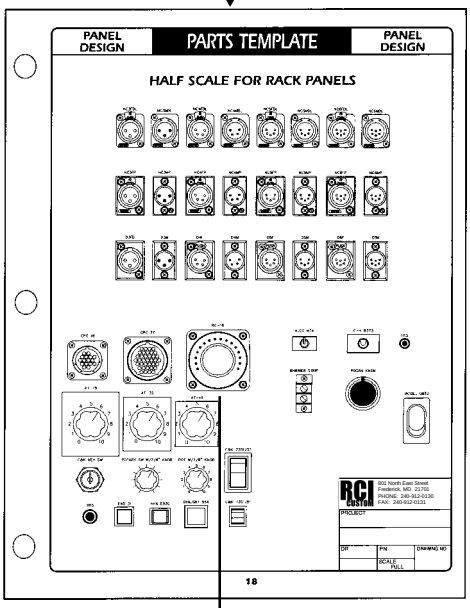
LAYOUT INSTRUCTIONS

PANEL DESIGN

STEP 1.

Make copies of rack panels and <u>half scale</u> symbols on pages 18 & 19.





STEP 2.

<u>Trace or Paste</u>

Place the symbol page under the copy of the rack panel and trace the devices on the blank plate at the desired location

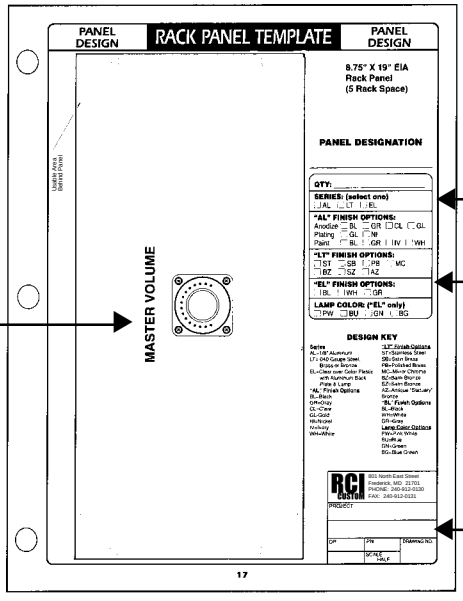
<u>OR</u>

cut out the appropriate devices from the copy of the symbol page and paste them on the blank plate at the desired location.

*Be sure to note device sizes and usable area of rack panel.

STEP 3.

Write in text to be engraved on panel. If the panel has multiple quantities, indicate subsequent engraving.

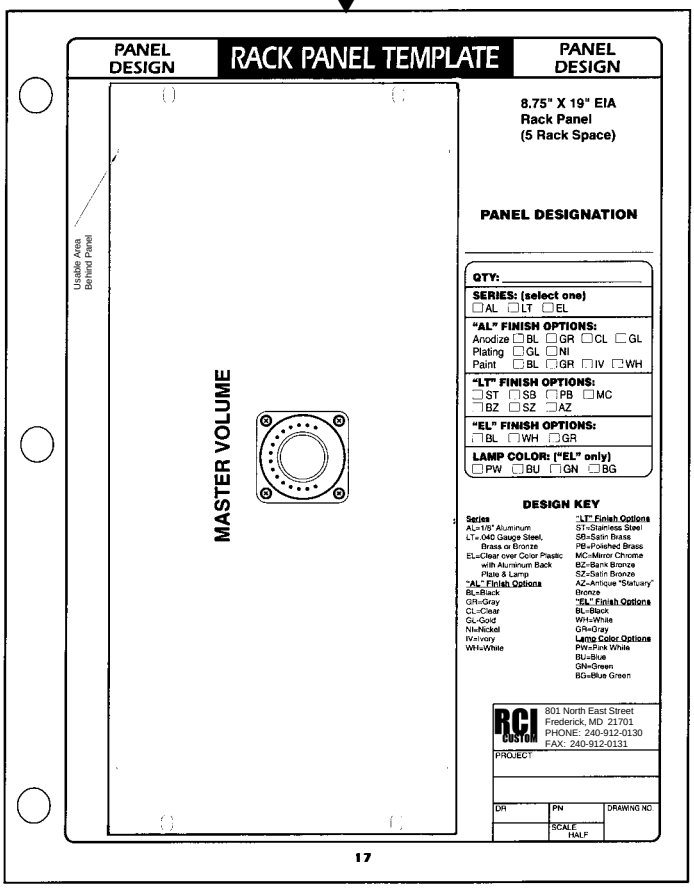


STEP 4.

Indicate panel designation, quantity, and finish type, and any other additional engraving or silkscreening requirements. Fill title block with appropriate information, if desired.

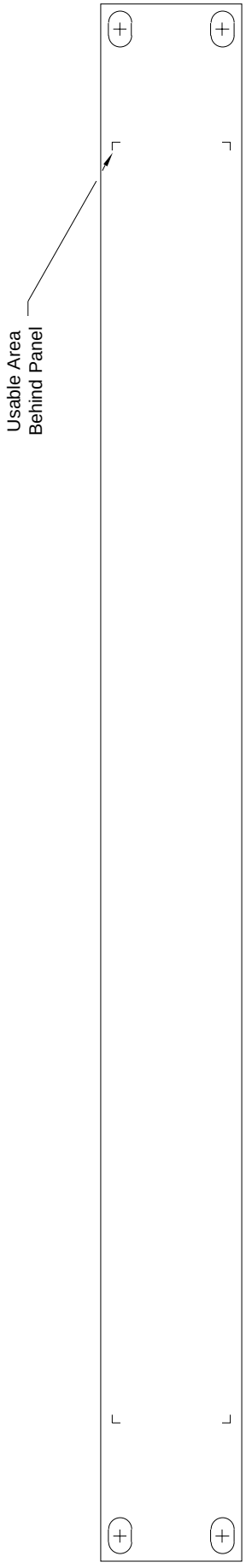
STEP 5.

Fax completed panel design to our AVD Sales Department for quotation.



RACK PANEL TEMPLATE

PANEL DESIGN



1.75" X 19" EIA Rack Panel (1 Rack Space)

PANEL DESIGNATION

QTY: _____

SERIES: (select one)
□ AL □ LT □ EL

"AL" FINISH OPTIONS:
Anodize □ BL □ GR □ CL □ GL
Plating □ GL □ NI
Paint □ BL □ GR □ IV □ WH

"LT" FINISH OPTIONS:
□ ST □ SB □ PB □ MC
□ BZ □ SZ □ AZ

"EL" FINISH OPTIONS:
□ BL □ WH □ GR

LAMP COLOR: ("EL" only)
□ PW □ BU □ GN □ BG

DESIGN KEY

Series
AL=1/8" Aluminum
LT=.040 Gauge Steel,
Brass or Bronze
EL=Clear over Color Plastic with
Aluminum Back Plate & Lamp

"AL" Finish Options
BL=Black
GR=Gray
CL=Clear
GL-Gold
NI=Nickel
IV=Ivory
WH=White

"LT" Finish Options
ST=Stainless Steel
SB=Satin Brass
PB=Polished Brass
MC=Mirror Chrome
BZ=Bank Bronze
SZ=Satin Bronze
AZ=Antique "Statuary" Bronze

"EL" Finish Options
BL=Black
WH=White
GR=Gray

Lamp Color Options
PW=Pink White
BU=Blue
GN=Green
BG=Blue Green

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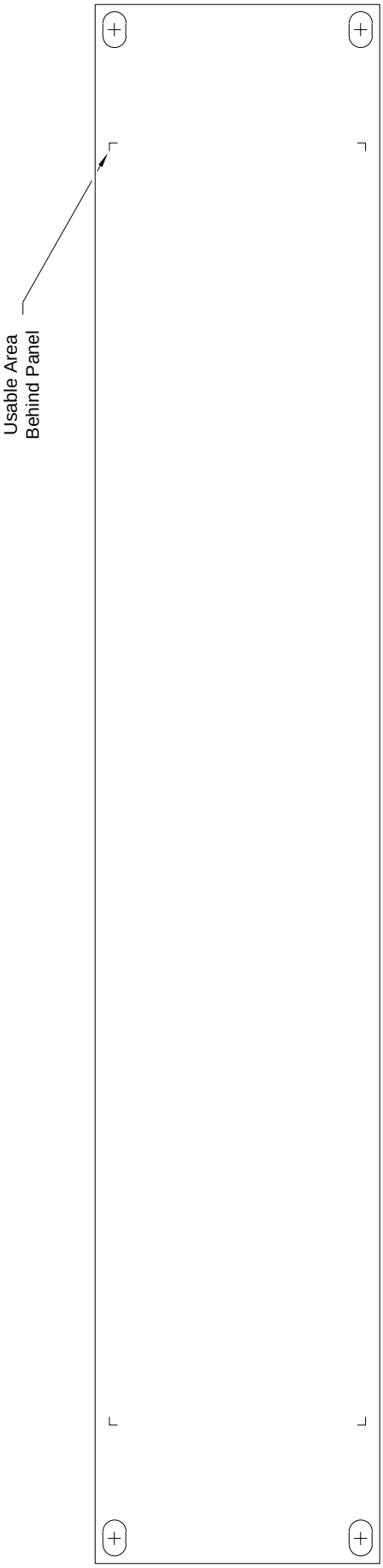
PROJECT		
DR	PN	DRAWING NO.
	SCALE HALF	

RACK PANEL TEMPLATE

PANEL DESIGN



3.5" X 19" EIA
Rack Panel
(2 Rack Space)

PANEL DESIGNATION

QTY: _____

SERIES: (select one)
☐ AL ☐ LT ☐ EL

"AL" FINISH OPTIONS:
Anodize ☐ BL ☐ GR ☐ CL ☐ GL
Plating ☐ GL ☐ NI
Paint ☐ BL ☐ GR ☐ IV ☐ WH

"LT" FINISH OPTIONS:
☐ ST ☐ SB ☐ PB ☐ MC
☐ BZ ☐ SZ ☐ AZ

"EL" FINISH OPTIONS:
☐ BL ☐ WH ☐ GR

LAMP COLOR: ("EL" only)
☐ PW ☐ BU ☐ GN ☐ BG

DESIGN KEY

Series
AL=1/8" Aluminum
LT=.040 Gauge Steel, Brass or Bronze
EL=Clear over Color Plastic with Aluminum Back Plate & Lamp

"AL" Finish Options
BL=Black
GR=Gray
CL=Clear
GL-Gold
NI=Nickel
IV=Ivory
WH=White

"LT" Finish Options
ST=Stainless Steel
SB=Satin Brass
PB=Polished Brass
MC=Mirror Chrome
BZ=Bank Bronze
SZ=Satin Bronze
AZ=Antique "Statuary" Bronze

"EL" Finish Options
BL=Black
WH=White
GR=Gray

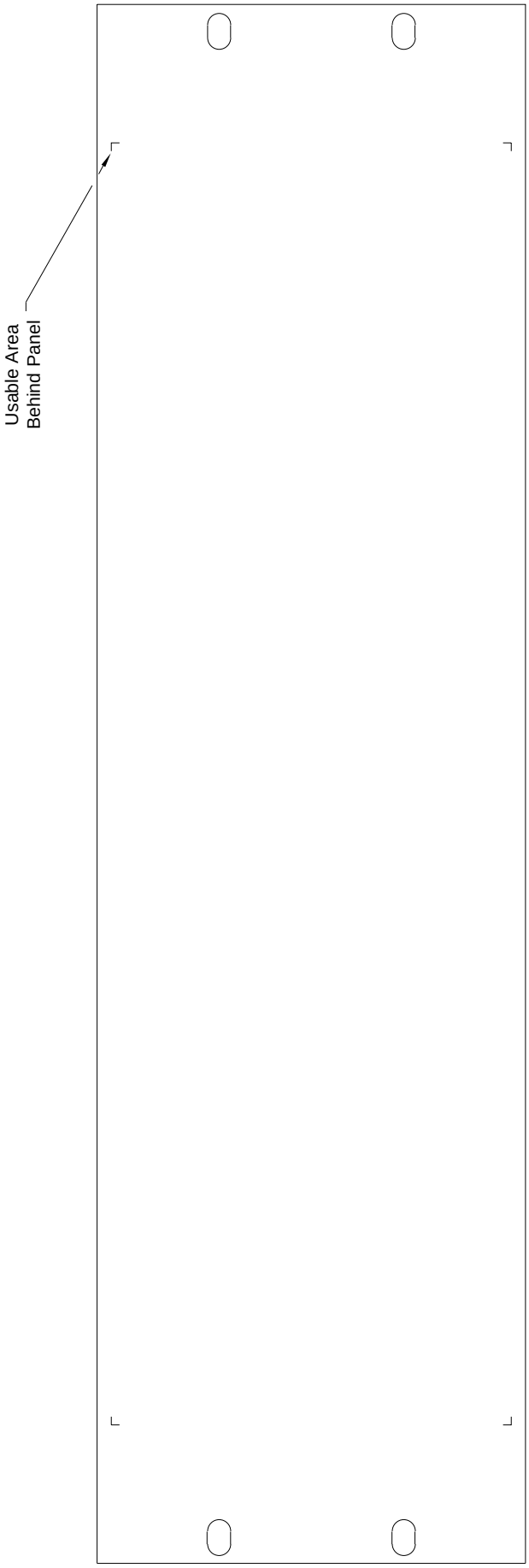
Lamp Color Options
PW=Pink White
BU=Blue
GN=Green
BG=Blue Green

RCI CUSTOM
801 North East Street
Frederick, MD 21701
PHONE 301-620-9130
FAX 301-620-9103

PROJECT		
DR	PN	DRAWING NO.
	SCALE HALF	

RACK PANEL TEMPLATE

PANEL DESIGN



5.25" X 19" EIA Rack Panel (3 Rack Space)

PANEL DESIGNATION

_____

QTY: _____

SERIES: (select one)
☐ AL ☐ LT ☐ EL

"AL" FINISH OPTIONS:
Anodize ☐ BL ☐ GR ☐ CL ☐ GL
Plating ☐ GL ☐ NI
Paint ☐ BL ☐ GR ☐ IV ☐ WH

"LT" FINISH OPTIONS:
☐ ST ☐ SB ☐ PB ☐ MC
☐ BZ ☐ SZ ☐ AZ

"EL" FINISH OPTIONS:
☐ BL ☐ WH ☐ GR

LAMP COLOR: ("EL" only)
☐ PW ☐ BU ☐ GN ☐ BG

DESIGN KEY

Series
AL=1/8" Aluminum
LT=.040 Gauge Steel, Brass or Bronze
EL=Clear over Color Plastic with Aluminum Back Plate & Lamp

"AL" Finish Options
BL=Black
GR=Gray
CL=Clear
GL-Gold
NI=Nickel
IV=Ivory
WH=White

"LT" Finish Options
ST=Stainless Steel
SB=Satin Brass
PB=Polished Brass
MC=Mirror Chrome
BZ=Bank Bronze
SZ=Satin Bronze
AZ=Antique "Statuary" Bronze

"EL" Finish Options
BL=Black
WH=White
GR=Gray

Lamp Color Options
PW=Pink White
BU=Blue
GN=Green
BG=Blue Green

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Frederick, MD 21701
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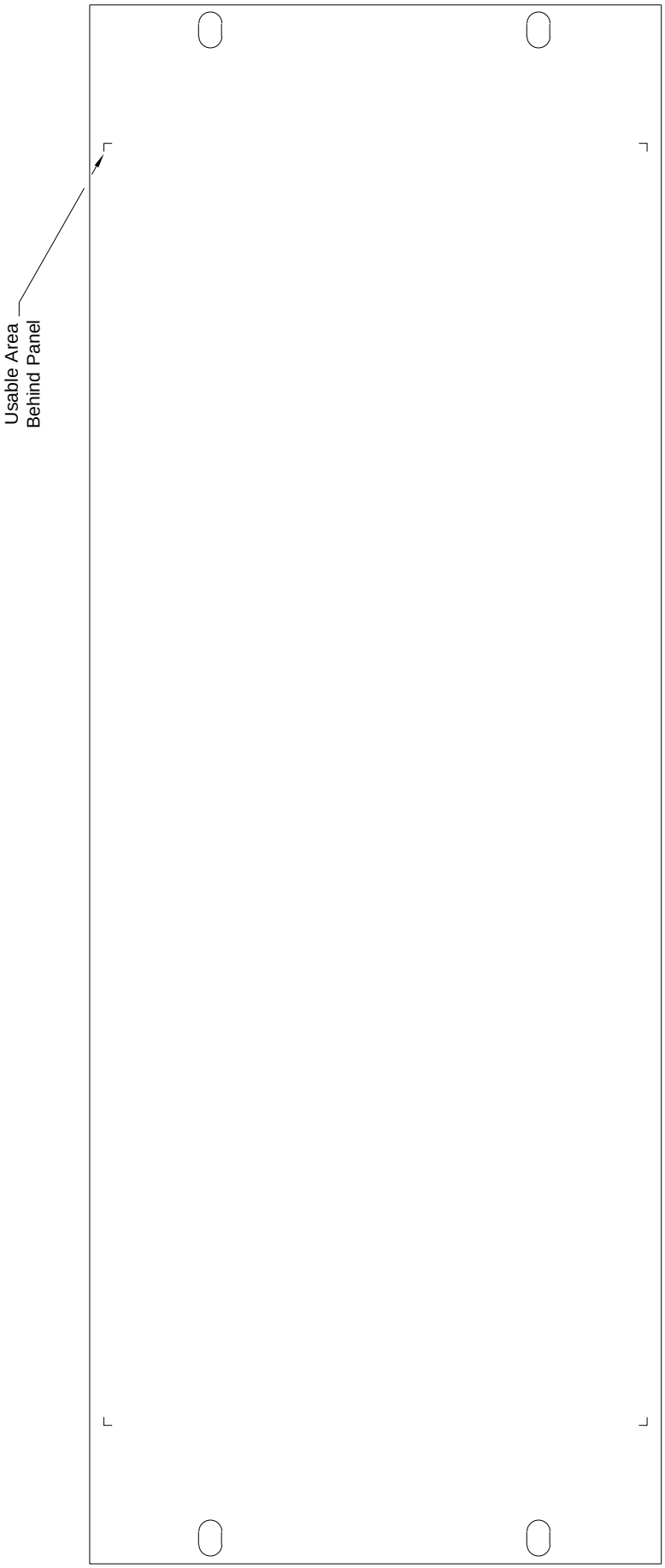
FAX 301-620-9103

PROJECT		
DR	PN	DRAWING NO.
	SCALE HALF	

RACK PANEL TEMPLATE

PANEL DESIGN



7" X 19" EIA
Rack Panel
(4 Rack Space)

PANEL DESIGNATION

_____

QTY: _____

SERIES: (select one)
□ AL □ LT □ EL

"AL" FINISH OPTIONS:
Anodize □ BL □ GR □ CL □ GL
Plating □ GL □ NI
Paint □ BL □ GR □ IV □ WH

"LT" FINISH OPTIONS:
□ ST □ SB □ PB □ MC
□ BZ □ SZ □ AZ

"EL" FINISH OPTIONS:
□ BL □ WH □ GR

LAMP COLOR: ("EL" only)
□ PW □ BU □ GN □ BG

DESIGN KEY

Series
AL=1/8" Aluminum
LT=.040 Gauge Steel, Brass or Bronze
EL=Clear over Color Plastic with Aluminum Back Plate & Lamp

"AL" Finish Options
BL=Black
GR=Gray
CL=Clear
GL-Gold
NI=Nickel
IV=Ivory
WH=White

"LT" Finish Options
ST=Stainless Steel
SB=Satin Brass
PB=Polished Brass
MC=Mirror Chrome
BZ=Bank Bronze
SZ=Satin Bronze
AZ=Antique "Statuary" Bronze

"EL" Finish Options
BL=Black
WH=White
GR=Gray

Lamp Color Options
PW=Pink White
BU=Blue
GN=Green
BG=Blue Green

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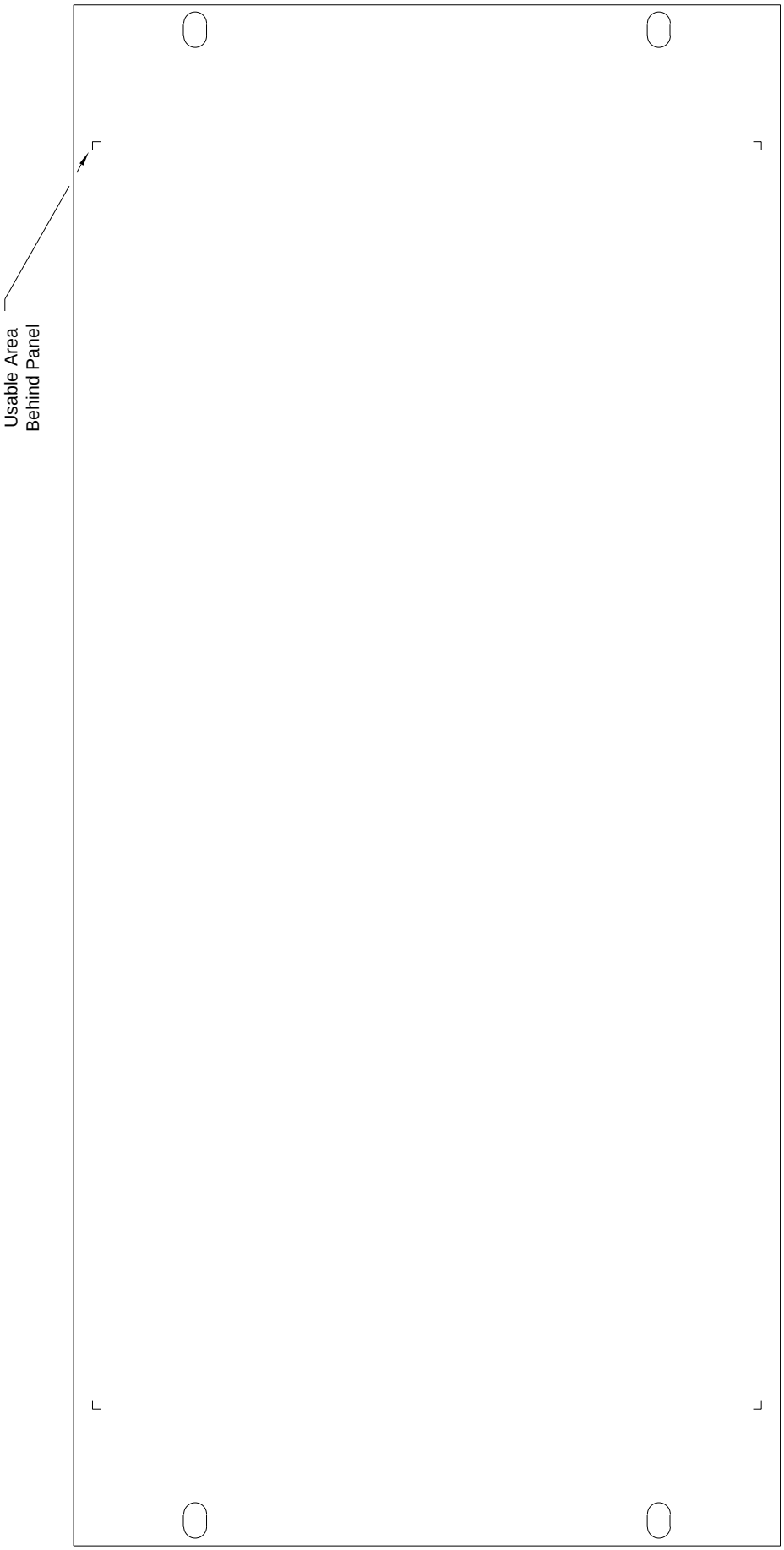
FAX 301-620-9103

PROJECT		
DR	PN	DRAWING NO.
	SCALE HALF	

RACK PANEL TEMPLATE

PANEL DESIGN



8.75" X 19" EIA Rack Panel (5 Rack Space)

PANEL DESIGNATION

QTY: _____

SERIES: (select one)
☐ AL ☐ LT ☐ EL

"AL" FINISH OPTIONS:
Anodize ☐ BL ☐ GR ☐ CL ☐ GL
Plating ☐ GL ☐ NI
Paint ☐ BL ☐ GR ☐ IV ☐ WH

"LT" FINISH OPTIONS:
☐ ST ☐ SB ☐ PB ☐ MC
☐ BZ ☐ SZ ☐ AZ

"EL" FINISH OPTIONS:
☐ BL ☐ WH ☐ GR

LAMP COLOR: ("EL" only)
☐ PW ☐ BU ☐ GN ☐ BG

DESIGN KEY

Series
AL=1/8" Aluminum
LT=.040 Gauge Steel, Brass or Bronze
EL=Clear over Color Plastic with Aluminum Back Plate & Lamp

"AL" Finish Options
BL=Black
GR=Gray
CL=Clear
GL-Gold
NI=Nickel
IV=Ivory
WH=White

"LT" Finish Options
ST=Stainless Steel
SB=Satin Brass
PB=Polished Brass
MC=Mirror Chrome
BZ=Bank Bronze
SZ=Satin Bronze
AZ=Antique "Statuary" Bronze

"EL" Finish Options
BL=Black
WH=White
GR=Gray

Lamp Color Options
PW=Pink White
BU=Blue
GN=Green
BG=Blue Green

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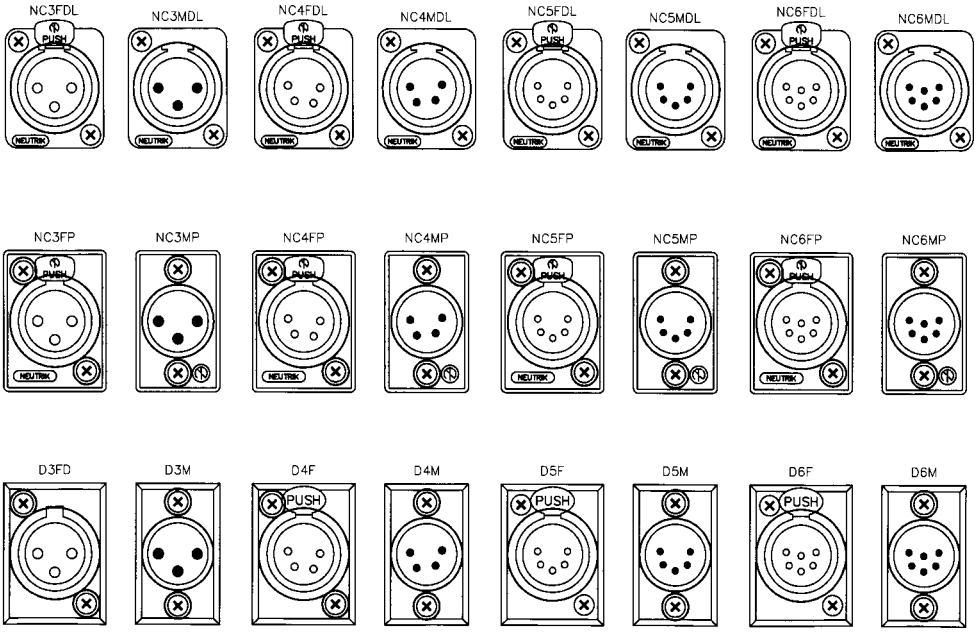
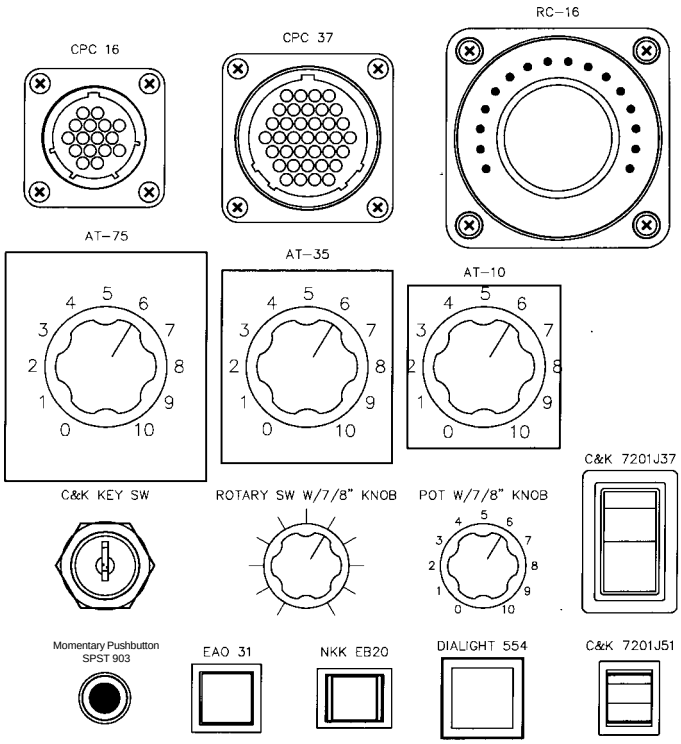
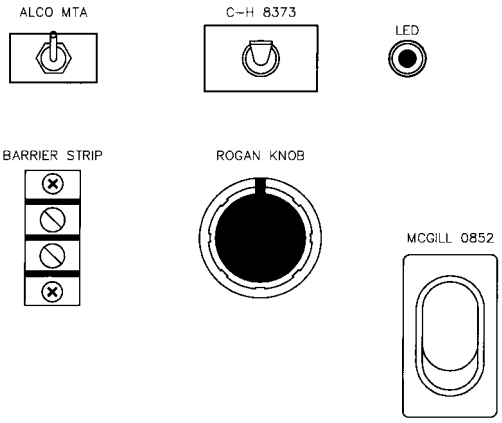
PHONE 301-620-9130
FAX 301-620-9103

PROJECT		
DR	PN	DRAWING NO.
	SCALE HALF	

HALF SCALE FOR RACK PANELS







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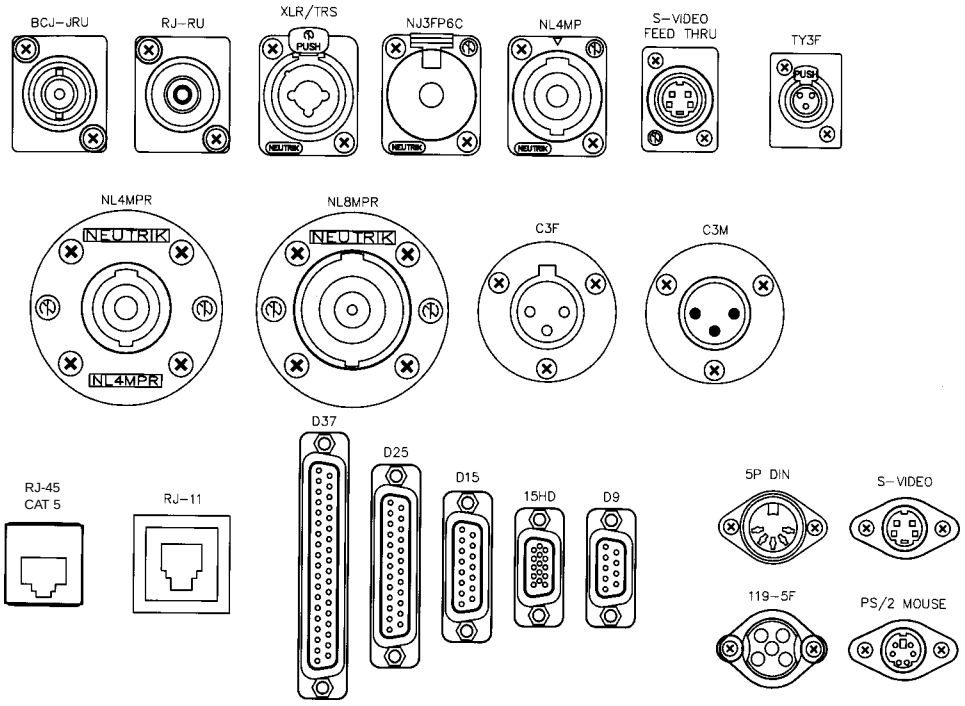
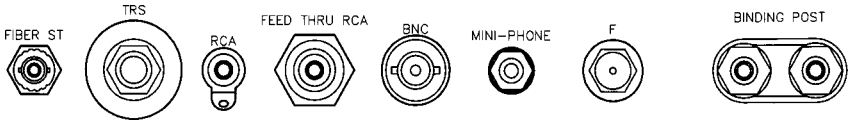
PROJECT		
DR	PN	DRAWING NO.
	SCALE HALF	

HALF SCALE FOR RACK PANELS



Specify solder type, feedthrough, or crimp.



Refer to RCI Custom Catalog pages 24-27 for additional connector options.

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PROJECT		
DR	PN	DRAWING NO.
	SCALE HALF	

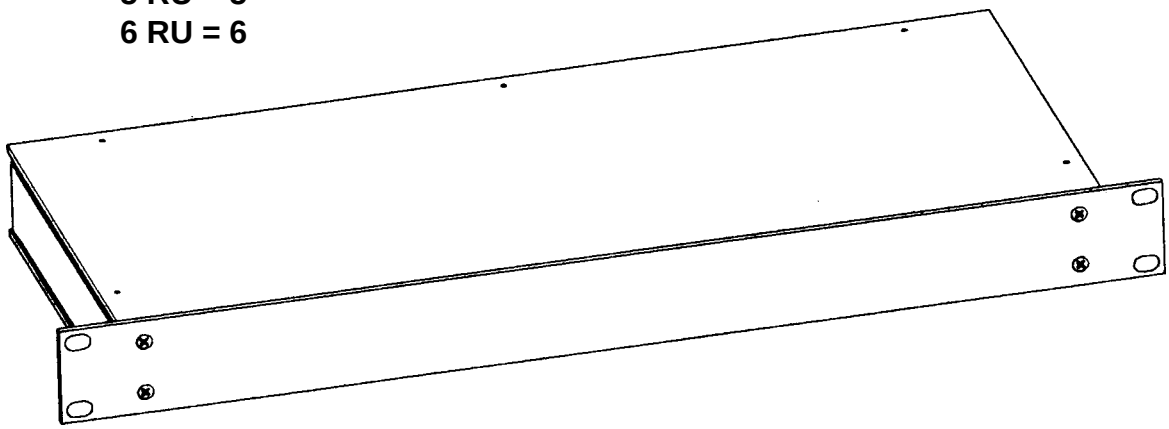
CUSTOM CHASSIS

MOUNTS TO 19" EIA STANDARD RACK PANEL

STANDARD SIZES

CH-X-Y

HEIGHT = "X" PANEL SIZE	DEPTH = "Y" ACTUAL SIZE
1 RU = 1	5 = 5"
2 RU = 2	7 = 7"
3 RU = 3	9 = 9"
4 RU = 4	
5 RU = 5	
6 RU = 6	



SPECIFICATIONS

WIDTH (ASSEMBLED) - 17"

MATERIAL - 1/16" T6 ALUMINUM

FINISH - GOLD ALODINE

FRONT AND REAR PANELS MOUNT VIA #6-32 SCREWS INTO PEM-NUTS FASTENED INTO THE SIDE PANELS.

TOP AND BOTTOM ARE FASTENED VIA #4 SHEET METAL SCREWS.

NOTE - FRONT PANEL MUST BE ORDERED SEPARATELY.
SEE PAGES 12-17

RCI CUSTOM Custom Products
801 North East Street, Frederick, MD 21701 • PHONE 301-620-9130 • FAX 301-620-9103 1/99

RDL®
Radio Design Labs

SPECIALISTS IN PRACTICAL PRECISION ENGINEERING™

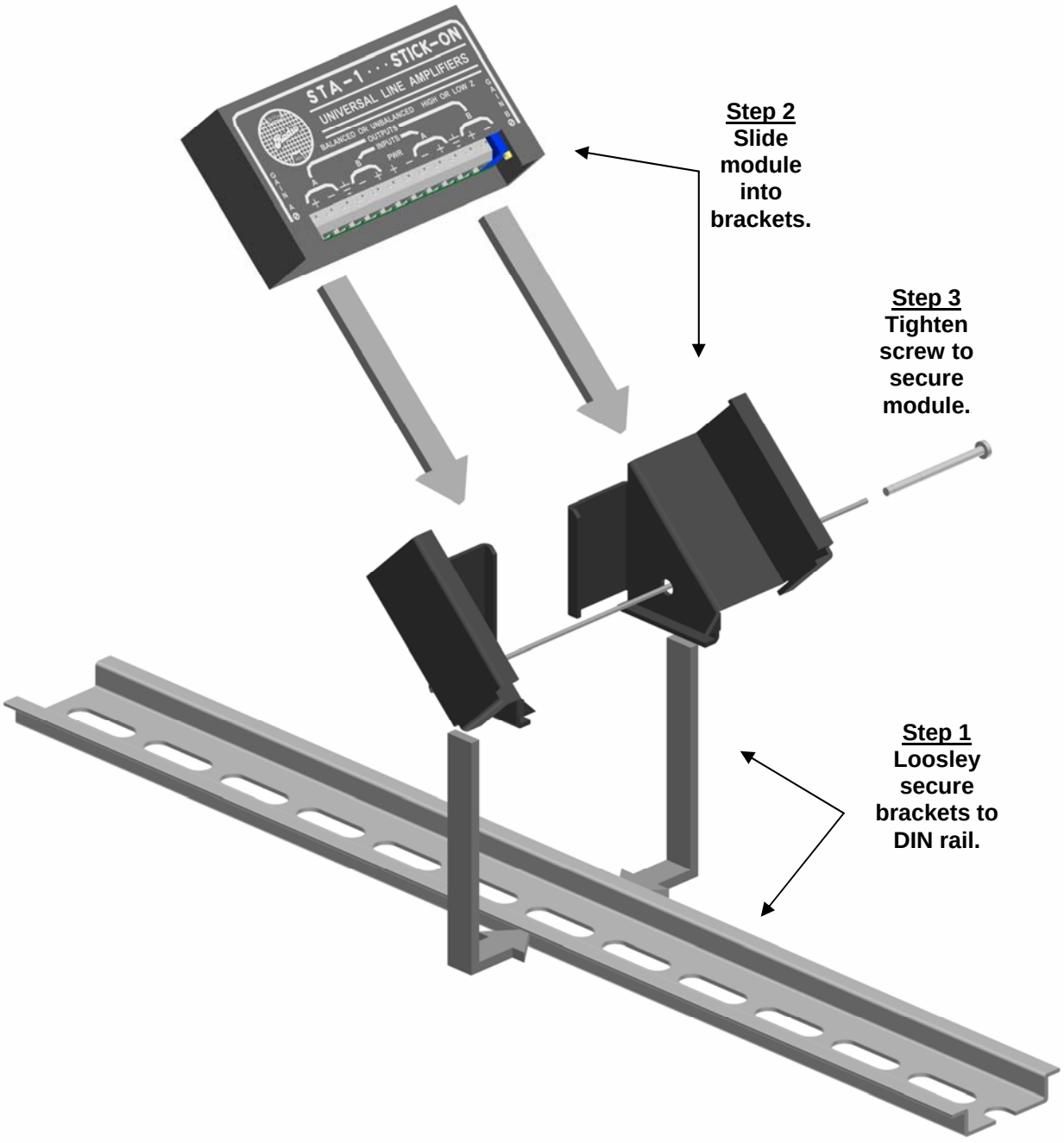
ACCESSORIES

Model DRA-35S
35 mm DIN Rail Adapter

Installation/Operation

CE

EN55103-1 E1-E5; EN55103-2 E1-E4
Typical Performance reflects product at publication time exclusive of EMC data, if any, supplied with product. Specifications are subject to change without notice.



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Europe [NH Amsterdam] (++31) 20-6238 983; Fax: (++31) 20-6225-287

RDL® Radio Design Labs

SPECIALISTS IN PRACTICAL PRECISION ENGINEERING™

FLAT-PAK™ SERIES

Model FP-UBC6
Unbalanced to Balanced Converter

ANYWHERE YOU NEED...

- Unbalanced to Balanced Audio
- 6 Channel Conversion
- Connectorized Audio Converter
- Low Noise and Distortion
- Cabinet, Shelf or Rack Mounting
- Convenience of RDL FLAT-PAKs

You Need The FP-UBC6!

The FP-UBC6 is part of the group of versatile FLAT-PAK products from Radio Design Labs. The unique FLAT-PAK case can be directly screwed or bolted to cabinets or shelves. Optionally available rack-mounting accessories permit single or multiple FLAT-PAK module mounting. All FLAT-PAK modules are supplied with a power interconnect cable for daisy-chaining multiple modules from a single power supply.

APPLICATION: The FP-UBC6 is the ideal choice for multiple channel connectorized conversion from unbalanced to balanced audio. This module features six identical channels, making it ideally suited to converting consumer 6-channel surround sound into the professional audio format. Each input channel is unbalanced, connected through a gold plated phono jack. Each output is balanced, connected through an XLR jack. A gain trim potentiometer is provided for each channel.

The normal gain setting is indicated for the trimming potentiometer. This setting produces a +4 dBu balanced output for a –10 dBV unbalanced input. The gain is adjustable –5 dB to +10 dB from the normal gain. Therefore, a +4 dBu output signal is possible from input signals ranging from –20 dBV to –5 dBV.

The FP-UBC6 circuitry features low noise and distortion, excellent headroom and crosstalk performance and the superior audio clarity for which RDL products are known.

Power may be connected to the FP-UBC6 through either a terminal block or a dc power input jack. The input voltage to the module is carried through to the output dc jack permitting additional modules to be powered from the same power supply.

Wherever convenient, economical, high performance six channel audio format conversion is required, the FP-UBC6 is the ideal choice. Use the FP-UBC6 individually, or combine it with other RDL RACK-UP®, STICK-ON®, TX™, or FLAT-PAK series products as part of a complete audio/video system.

RDL®
Radio Design Labs

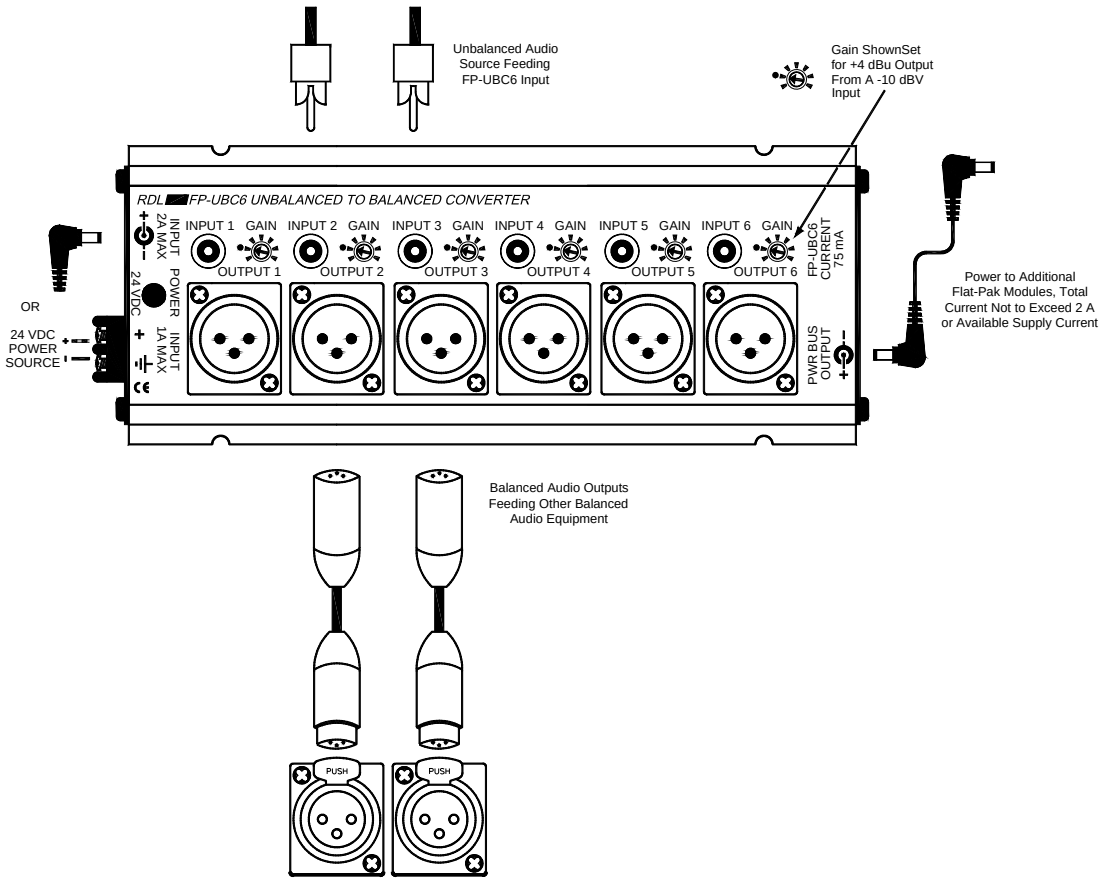
SPECIALISTS IN PRACTICAL PRECISION ENGINEERING™

FLAT-PAK™ SERIES

Model FP-UBC6
Unbalanced to Balanced Converter

Installation/Operation

CE **EN55103-1 E1-E5; EN55103-2 E1-E4**
Typical Performance reflects product at publication time exclusive of EMC data, if any, supplied with product. Specifications are subject to change without notice.


Unbalanced Audio Source Feeding FP-UBC6 Input
Gain ShownSet for +4 dBu Output From A -10 dBV Input
RDL FP-UBC6 UNBALANCED TO BALANCED CONVERTER
INPUT 1 GAIN INPUT 2 GAIN INPUT 3 GAIN INPUT 4 GAIN INPUT 5 GAIN INPUT 6 GAIN
OUTPUT 1 OUTPUT 2 OUTPUT 3 OUTPUT 4 OUTPUT 5 OUTPUT 6
INPUT 2A MAX
24 VDC POWER
INPUT 1A MAX
FP-UBC6 CURRENT 75 mA
PWR BUS OUTPUT
OR
24 VDC POWER SOURCE
Power to Additional Flat-Pak Modules, Total Current Not to Exceed 2 A or Available Supply Current
Balanced Audio Outputs Feeding Other Balanced Audio Equipment
PUSH
PUSH

TYPICAL PERFORMANCE

Amps per FP-UBC6:	6 identical circuits
Gain:	-5 dB to +10 dB adjustable (relative to +4 dBu output for –10 dBV input); (separate controls for each channel)
Input level:	-20 dBV to –5 dBV (for +4 dBu output)
Input impedance:	10 kΩ
Input configuration:	Unbalanced
Output impedance:	150 Ω balanced, drives 600 Ω or 10 kΩ lines
Output configuration:	Balanced or unbalanced
Frequency Response:	20 Hz to 40 kHz (+/- 0.25 dB)
Total Harmonic Distortion:	< 0.05%; typ. 0.01% (1 kHz)
IMD:	< 0.02%
Output Level:	+4 dBu
Headroom:	> 18 dB (at rated output level of +4 dBu)
Noise:	< -90 dB referred to +4 dBu (20 Hz to 20 kHz)
Crosstalk:	Better than -80 dB (20 Hz to 20 kHz)
Power Requirement:	24 Vdc @ 75 mA, Ground-referenced
Overall Dimensions:	Height: 1.29 in. 3.28 cm Width: 3.25 in. 8.26 cm Length: 8.55 in. 21.72 cm

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RDL®
Radio Design Labs

SPECIALISTS IN PRACTICAL PRECISION ENGINEERING™

STICK-ON® SERIES
Model ST-MX3
Line Level Mixer

ANYWHERE YOU NEED...

- Audio Mixing with Up To Three Inputs
- Balanced or Unbalanced Inputs & Outputs
- To Add Additional Inputs to an Existing Mixer
- To Combine Signals of Different Level, Impedance, or Bal./Unbal. Configuration
- Low Noise and Low Distortion Performance
- Ground-Referenced or Floating Power

You Need The ST-MX3!

The ST-MX3 is part of a group of products in the STICK-ON series from Radio Design Labs. The durable adhesives provided with the ST-MX3 permit permanent or removable mounting. Numerous available mounting accessories, brackets, rack-mount and table top chassis are optionally available to facilitate any system. The ST-MX3 gives you the advantage of a high performance audio mixer with a big plus, you can put it where you need it, and you can combine modules to build larger mixing systems using whatever combination you need!

APPLICATION: The ST-MX3 is a three-channel audio mixer for combining line-level signals to a line-level output. Individual level control is provided for each input. Each input features a separate preamplifier circuit, which isolates it from the other inputs. A single-turn trimmer is provided for each of the three input preamps. Signals from the three preamps are actively summed and fed to the output line-level driver amplifier. The line-input circuit design of the ST-MX3 allows the inputs to accept either balanced to unbalanced signals, or either high or low impedance. The output is capable of driving into either high or low impedance, balanced or unbalanced loads. Each output may be connected in parallel with other ST-MX3s, or ST-UMX3s to form a multi-channel mixer to fit nearly any installation! The ST-MX3 features amplifier circuitry which produces the unsurpassed pure clarity for which Radio Design Labs products are known! Some features are:

- Ultra-low Distortion
- Ultra-low Noise
- Input Levels Individually Adjustable
- Ample Headroom at Operating Level
- Full Operation in either High or Low Impedance Circuits
- Outputs Short-Circuit Protected
- Positive Connections via Barrier Block, No Audio Connectors to Wire

The audio clarity, low noise, low distortion and versatility make this module ideally suited to a wide variety of demanding audio applications. Use this module in conjunction with other RDL modules as part of a high quality, flexible audio/video system.

RDL®
Radio Design Labs

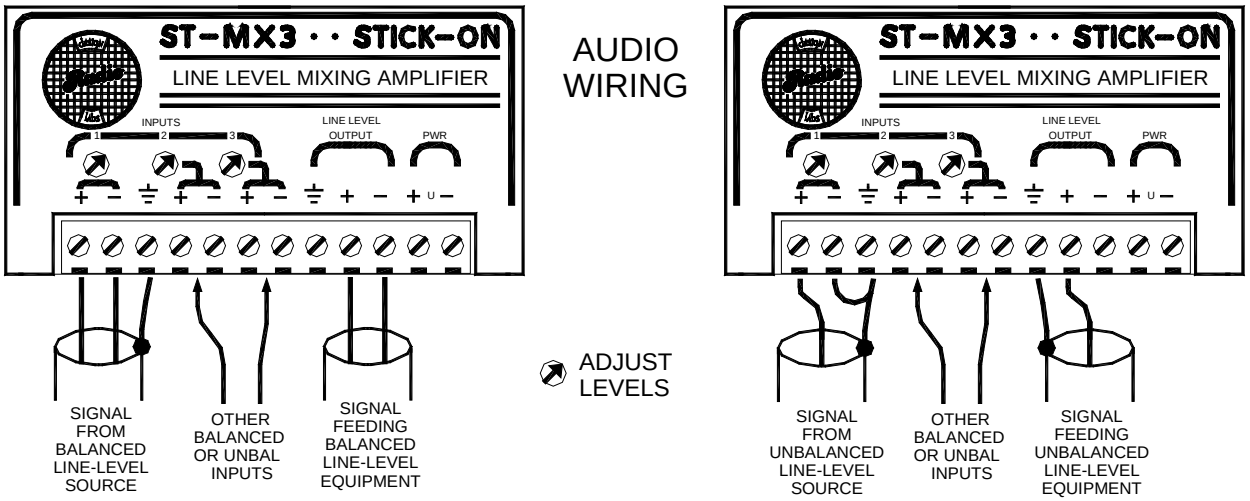
SPECIALISTS IN PRACTICAL PRECISION ENGINEERING™

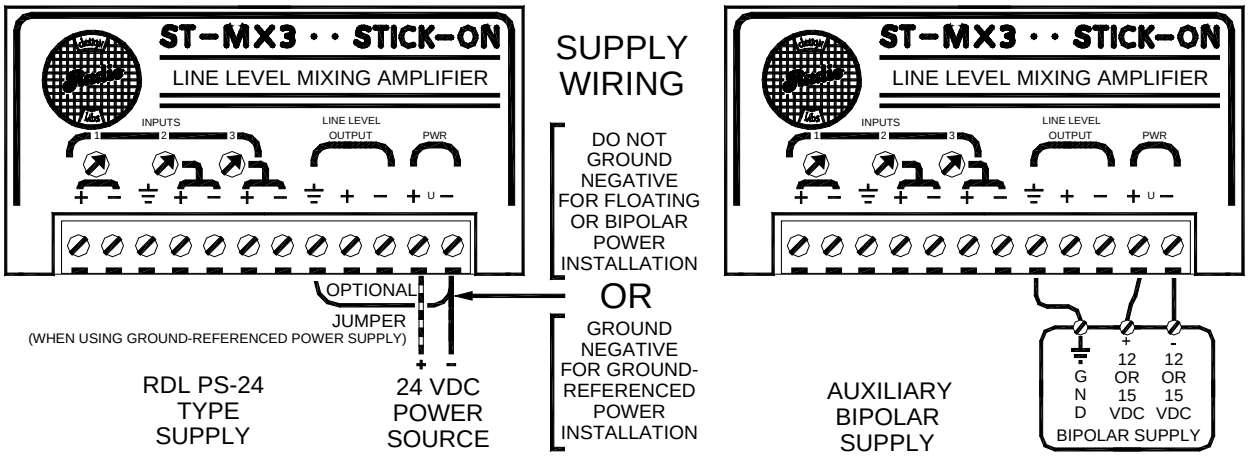
STICK-ON® SERIES

Model ST-MX3
Line Level Mixer

Installation/Operation

CE **EN55103-1 E1-E5; EN55103-2 E1-E4**
Typical Performance reflects product at publication time exclusive of EMC data, if any, supplied with product. Specifications are subject to change without notice.





TYPICAL PERFORMANCE

Inputs (3):	Line-level	Headroom:	22 dB (output);16dB (input) Rel. +4 dBu
Input Range:	-20 dBu to +18 dBu (for +4 dbu output) -24 dBu to +14 dBu (for 0 dBu output)	Noise below +4 dBu:	< -80 dB (all inputs @ unity gain) < -80 dB (all inputs @ 10 dB gain) < -75 dB (all inputs @ 20 dB gain)
Input Impedance:	> 30 kΩ bridging	CMRR:	> 50 dB (60 or 120 Hz)
Gain (each input):	-14 dB to +24 dB Adjustable	Multiple Module System Loss:	
Output:	+4 dBu nominal		6 dB with two module outputs paralleled 10 dB with three module outputs paralleled 12 dB with four module outputs paralleled
Output Impedance:	400 Ω to drive low or high impedance balanced or unbalanced lines	Supply Input:	24 to 33 Vdc @ 55 mA, Ground-referenced or Floating
Input or Output Configuration:	Balanced or unbalanced		
Frequency Response:	10 Hz to 20 kHz (+/- 0.50 dB)		
THD+N:	< 0.03% (below +4 dBu 10 Hz to 20 kHz)		

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Europe [NH Amsterdam] (++31) 20-6238 983; Fax: (++31) 20-6225-287

the TOTAL TAP

toner
cable equipment, inc.
969 Horsham Road
Horsham, Pennsylvania 19044 USA

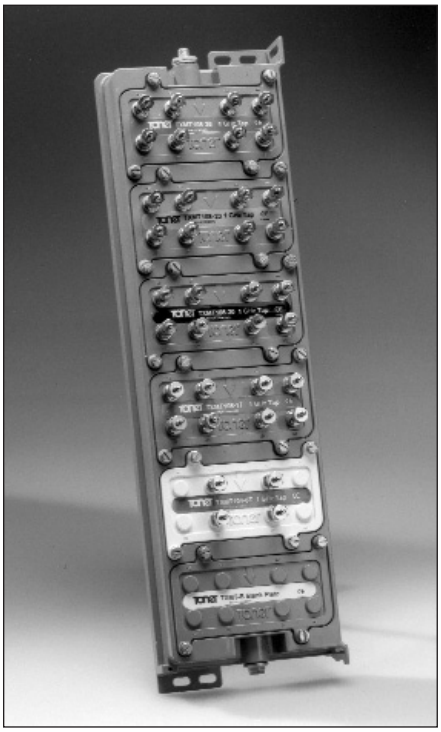
The Tap Assembly to Suit Your Needs

The Total Tap is the only fully modular, custom configurable tap designed to serve from 2 to 48 subscribers.

By using the Total Tap, *You* have the ability to configure the tap plates and values the way *You* need to, to service your customers based on *Your* system design. No other tap in the industry gives *You* this flexibility.

Total Tap Features

- Modular Assembly
- RF Bypass Circuitry
- Six Different Tap Locations
- Input From Both Ends
- Wide Spaced F Ports
- 2 to 48 Tap Ports
- Compact Design
- 2, 4, or 8 Port Tap Plates
- Equalization
- Ease of Installation
- -100dB RF Shielding
- Baked Acrylic Finish
- Stainless Steel Hardware
- 1 GHz Bandwidth
- Power Passing Housing
- US Patent # 6292371



The Total Tap is a completely new concept for the distribution of signal from one central location to up to 48 different locations (subscribers).

The Total Tap features a precision die cast aluminum housing that has six tap cavities for the installation of six plug in tap plates to provide service for 2 to 48 locations (subscribers).

Each tap cavity can accept one of several types of 2, 4 or 8 port tap plates, blank plates, equalizer plates or amplifier plates. With this combination of options available in each of the six tap cavities, an almost unlimited range of configurations is available.

The Total Tap housing has a 5/8" entry fitting at each end so the tap can be used in several different configurations. The housing can be fed from one end and use a terminating plate in the last position. The housing can be fed from one end with the other end being an output. Or, the housing can be fed from both ends using terminating plates back to back.

Toner Total Tap

Telephone:	Fax:	E-mail:	Internet:
215-675-2053	800-523-5947	215-675-7543	info@tonercable.com	http://www.tonercable.com

02/07

MODEL	TXMT108-26		TXMT108-23		TXMT108-20		TXMT108-17		TXMT108-14		TXMT108-11T	TXMT-B
TAP VALUE	26 dB		23 dB		20 dB		17 dB		14 dB		11.5 dB	Blank Plate
BANDWIDTH	— — — 5-1000 MHz — — —											
COLOR CODE	Blue		Orange		Black		Purple		Yellow		Brown	
TOLERANCE	± 1.5 dB		± 1.5 dB		± 1.5 dB		± 1.5 dB		± 1.5 dB		± 1.5 dB	
INSERTION LOSS	TYP	MAX	TYP	MAX	TYP	MAX	TYP	MAX	TYP	MAX		
10 - 30 MHz	0.7	0.9	0.7	1.0	1.0	1.2	2.2	2.5	3.0	3.7	Terminating	
30 - 150 MHz	0.7	0.9	0.7	0.9	0.9	1.2	2.3	2.6	3.1	3.9	Terminating	
150 - 300 MHz	0.7	0.9	0.7	1.0	1.0	1.4	2.3	2.6	3.3	4.0	Terminating	
300 - 450 MHz	0.7	0.9	0.7	1.0	1.1	1.4	2.4	2.7	3.4	4.1	Terminating	
450 - 600 MHz	0.8	1.0	0.8	1.1	1.1	1.5	2.5	2.8	3.6	4.2	Terminating	
600 - 750 MHz	0.9	1.2	0.9	1.3	1.2	1.8	2.6	2.9	3.7	4.3	Terminating	
750 - 860 MHz	0.9	1.3	1.0	1.6	1.3	1.8	2.6	2.9	3.8	4.4		
860 - 1000 MHz	0.9	1.4	1.1	1.8	1.4	2.3	2.6	3.1	4.0	5.3	Terminating	
RETURN LOSS (min)												
TAP												
10 - 30 MHz	25		25		25		25		25		25	
30 - 600 MHz	20		20		20		20		20		20	
600 - 1000 MHz	20		20		20		20		20		20	
INPUT/OUTPUT												
10 - 30 MHz	18		18		18		18		18		18	
30 - 600 MHz	20		20		20		20		20		20	
600 - 1000 MHz	18		18		18		18		18		18	
TAP TO TAP ISOLATION												
10 - 30 MHz	30		30		30		30		30		30	
30 - 600 MHz	27		27		27		27		27		27	
600 - 1000 MHz	27		27		27		27		27		27	

	TXMT-6H HOUSING	TXMT-3H HOUSING
Size	19 1/2" X 5 3/4" X 1 7/16"	11" X 5 3/4" X 1 7/16"
	49.6 cm X 14.6 cm X 3.7 cm	27.8 cm X 14.6 cm X 3.7 cm
Weight	4.2 pounds, 1.9 KG	2.5 pounds, 1.1 KG
RFI	>100 dB	
Bandwidth	5 - 1000 MHz	
Power Passing 60/90V, 4 amp		

NOTE: Terminating plates are painted white.

Toner Total Tap

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Specifications Subject To Change Without Notice.

Telephone: 215-675-2053
Fax: 800-523-5947 215-675-7543
E-mail: info@tonercable.com
Internet: http://www.tonercable.com

toner cable equipment, inc.
969 Horsham Road
Horsham, Pennsylvania 19044 USA

4 Port Tap Plate Specifications

MODEL	TXMT104-26		TXMT104-23		TXMT104-20		TXMT104-17		TXMT104-14		TXMT104-11		TXMT104-8T
TAP VALUE	26 dB		23 dB		20 dB		17 dB		14 dB		11.5 dB		8 dB
BANDWIDTH	— — — 5-1000 MHz — — —												
COLOR CODE	Blue		Orange		Black		Purple		Yellow		Brown		Green
TOLERANCE	± 1.5 dB		± 1.5 dB		± 1.5 dB		± 1.5 dB		± 1.5 dB		± 1.5 dB		± 1.2 dB
INSERTION LOSS	TYP	MAX	TYP	MAX	TYP	MAX	TYP	MAX	TYP	MAX	TYP	MAX	TERMINATING
- 30 MHz	0.5	0.8	0.7	1.0	1.3	1.6	1.4	1.7	2.1	2.5	3.3	3.6	Terminating
30 - 150 MHz	0.4	0.7	0.6	1.0	1.2	1.6	1.2	1.5	2.3	2.6	3.2	3.6	Terminating
150 - 300 MHz	0.5	0.8	0.7	1.0	1.3	1.6	1.3	1.6	2.3	2.6	3.3	3.6	Terminating
300 - 450 MHz	0.5	0.9	0.8	1.1	1.4	1.8	1.4	1.8	2.4	2.7	3.4	3.8	Terminating
450 - 600 MHz	0.6	1.0	0.9	1.3	1.5	1.9	1.6	1.9	2.5	2.8	3.6	3.9	Terminating
600 - 750 MHz	0.7	1.1	1.0	1.3	1.6	2.0	1.7	2.0	2.6	2.9	3.5	3.9	Terminating
750 - 860 MHz	0.9	1.3	1.2	1.6	1.7	2.2	1.8	2.2	2.8	3.1	3.6	4.0	Terminating
860 - 1000 MHz	1.2	1.6	1.7	2.1	2.0	2.5	2.1	2.6	3.2	3.6	3.7	4.2	Terminating
RETURN LOSS (min)													
TAP PORTS													
10 - 30 MHz	25		25		25		25		25		25		25
30 - 600 MHz	20		20		20		20		20		20		20
600 - 1000 MHz	20		20		20		20		20		20		20
INPUT/OUTPUT													
10 - 30 MHz	18		18		18		18		18		18		18
30 - 600 MHz	20		20		20		20		20		20		20
600 - 1000 MHz	18		18		18		18		18		18		18
TAP TO TAP ISOLATION													
10 - 30 MHz	27		27		27		27		27		27		27
30 - 600 MHz	27		27		27		27		27		27		27
600 - 1000 MHz	27		27		27		27		27		27		27

NOTE: add a T to the tap plate model to order a Terminating version of the tap plate.

2 Port Tap Plate Specifications

MODEL	TXMT102-26		TXMT102-23		TXMT102-20		TXMT102-17		TXMT102-14		TXMT102-11		TXMT102-8		TMXT102-4T
TAP VALUE	26 dB		23 dB		20 dB		17 dB		14 dB		11.5 dB		8 dB		4 dB
BANDWIDTH	— — — 5-1000 MHz — — —														
COLOR CODE	Blue		Orange		Black		Purple		Yellow		Brown		Green		Red
TOLERANCE	± 1.2 dB		± 1.2 dB		± 1.2 dB		± 1.2 dB		± 1.2 dB		± 1.2 dB		± 1.2 dB		± 1.0 dB
INSERTION LOSS	TYP	MAX	TYP	MAX	TYP	MAX	TYP	MAX	TYP	MAX	TYP	MAX	TYP	MAX	TERMINATING
10 - 30 MHz	0.3	0.6	0.5	0.8	1.2	1.5	1.4	1.7	2.1	2.4	2.2	2.5	3.4	3.7	Terminating
30 - 150 MHz	0.4	0.7	0.6	0.9	1.1	1.4	1.3	1.6	2.0	2.3	2.3	2.6	3.3	3.7	Terminating
150 - 300 MHz	0.5	0.8	0.7	1.0	1.2	1.5	1.4	1.7	2.1	2.5	2.4	2.7	3.4	3.8	Terminating
300 - 450 MHz	0.5	0.8	0.7	1.0	1.3	1.7	1.6	1.9	2.2	2.5	2.5	2.8	3.4	3.8	Terminating
450 - 600 MHz	0.6	0.9	0.8	1.1	1.4	1.7	1.6	1.9	2.4	2.6	2.6	2.9	3.6	3.9	Terminating
600 - 750 MHz	0.7	1.0	1.0	1.3	1.5	1.8	1.7	2.0	2.4	2.7	2.8	3.1	3.7	4.1	Terminating
750 - 860 MHz	0.9	1.2	1.1	1.4	1.5	1.9	1.7	2.0	2.5	2.8	2.9	3.2	4.0	4.4	Terminating
860 - 1000 MHz	1.2	1.5	1.7	2.0	1.9	2.2	2.2	2.5	3.0	3.3	3.6	3.9	4.8	5.3	Terminating
RETURN LOSS (min)															
TAP PORTS															
10 - 30 MHz	25		25		25		25		25		25		25		25
30 - 600 MHz	20		20		20		20		20		20		20		20
600 - 1000 MHz	20		20		20		20		20		20		20		20
INPUT/OUTPUT															
10 - 30 MHz	18		18		18		18		18		18		18		18
30 - 600 MHz	20		20		20		20		20		20		20		20
600 - 1000 MHz	18		18		18		18		18		18		18		18
TAP TO TAP ISOLATION															
10 - 30 MHz	27		27		27		27		27		27		27		27
30 - 600 MHz	27		27		27		27		27		27		27		27
600 - 1000 MHz	27		27		27		27		27		27		27		27

NOTE: add a T to the tap plate model to order a Terminating version of the tap plate.

Equalizer Plate Specifications

TXMT EQUALIZER PLATES

RETURN LOSS	> 16 dB							
MODEL	VALUE	Insertion Loss (Typical)						
		10 MHz	50 MHz	300 MHz	600 MHz	750 MHz	860 MHz	1000 MHz
TXMT-EQ-3	3 dB	3.2	3.4	2.6	1.9	1.8	1.7	1.2
TXMT-EQ-6	6 dB	5.8	5.6	3.4	1.9	1.5	1.2	0.7
TXMT-EQ-9	9 dB	8.5	8.4	5.7	3.2	2.4	1.8	0.7

Toner Total Tap 2 & 4 Port Specifications

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Specifications Subject To Change Without Notice.

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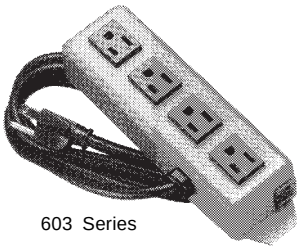
SLWABER®
THE LEADER IN POWER TECHNOLOGY

OUTLET STRIPS

Compact Series

General Specifications

Size:8-3/4"L x 2-3/8"W x 1-1/2"H
Case length (Excluding mounting tabs): 7-3/8"
Maximum rating: 15A, 125VAC, 60Hz, 1875 Watts, continuous duty
Outlets "U" ground
Seamless Steel case with baked-on finish
Components Color: Black
Power Cord: 14/3 SJT, Molded Plug



603 Series

* Models shown with asterisk are CSA Certified

608 Series : one outlet on end

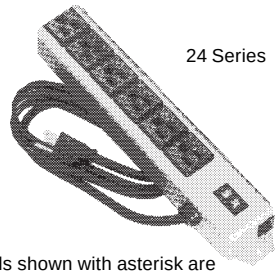
Compact Series Models (UL)

Model Number	No. Of Outlets	Master Switch	Pilot Light	Cord Length (ft.)	Circuit Breaker	Price
602	5	-	-	6	-	$14.46
602-15	5	-	-	15	-	18.70
UL602CB-6	5	-	-	6	yes	21.82
UL602CB-15	5	-	-	15	yes	26.02
*UL603CB-6	4	-	-	6	yes	20.66
*UL603CB-15	4	-	-	15	yes	24.85
*UL605CB-6	3	yes	yes	6	yes	23.50
*UL605CB-15	3	yes	yes	15	yes	27.75
*UL608CB-6	4	yes	yes	6	yes	25.17
*UL608CB-15	4	yes	yes	15	yes	29.42
4SPDX	4	yes	yes	6	yes	13.95
4SPDX-15	4	yes	yes	15	yes	17.95

Midlength Series

General Specifications

Size: 13-1/4"L x 2-3/8W x 1-1/2"H
Case length (excluding mounting tabs): 11-7/8"
Maximum rating: 15A, 125 VAC, 60Hz, 1875 Watts, continuous duty
Outlets: "U" ground
Seamless steel case with baked-on finish
Components color: black
Power Cord: 14/3 SJT, Molded Plug



24 Series

* Models shown with asterisk are CSA Certified

15 Series & 17 Series: one outlet on end

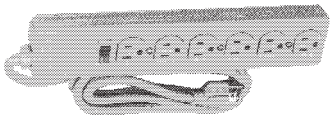
Midlength Series Models (UL)

Model Number	No. Of Outlets	No.of Switches	No.Pilot Lights	Cord Length (ft.)	Circuit Breaker	Price
UL15CB-6	7	1	1	6	yes	$32.02
UL15CB-15	7	1	1	15	yes	36.27
UL17CB-6	9	-	-	6	yes	30.20
UL17CB-15	9	-	-	15	yes	34.40
24CB	6	1	1	6	yes	27.91
24CB-15	6	1	1	15	yes	32.15
*UL24CB-6	6	1	1	6	yes	28.57
*UL24CB-15	6	1	1	15	yes	32.82
6SPDX	6	1	1	6	yes	15.95
6SPDX-15	6	1	1	15	yes	19.95

Premier Series

General Specifications

UL Listed
Protection: Circuit Breaker
Maximum rating: 15A, 125 VAC, 60Hz, 1875 Watts, continuous duty
Outlets "U" ground duplex, ivory color
Seamless steel case with baked-on beige finish
Power supply cord: 14/3 SJT, molded plug, beige color
Type III Keyhole-slot flush mounting
Switched models have an ivory switch housing with amber pilot light.



ULA6TME Series

Premier Series (UL)

Model Number	No. of Outlets	Switch With Light	Cord Length (ft.)	Dimensions Length	Width	Height	Mount-ing Centers	Price
ULA4TME-6	4	yes	6	9-1/4"	2-3/8"	1"	8-1/4"	$18.95
ULA4TME-15	4	yes	15	9-1/4"	2-3/8"	1"	8-1/4"	22.95
ULA6E-6	6	-	6	11-15/16"	2-3/8"	1"	10-15/16"	21.95
ULA6E-15	6	-	15	11-15/16"	2-3/8"	1"	10-15/16"	24.95
ULA6TME-6	6	yes	6	11-15/16"	2-3/8"	1"	10-15/16"	24.95
ULA6TME-15	6	yes	15	11-15/16"	2-3/8"	1"	10-15/16"	28.95

Trimline Series

General Specifications

Maximum rating: 15A, 125VAC, 60Hz, 1875 Watts, continuous duty
Outlets "U" ground
Components color: Black
Protection: Circuit Breaker
Power Supply cord: 14/3 SJT with molded plug
Case Color: Blue
Master Switch with Pilot Light

UL7415 Series

UL 2 Ft. Model Specifications

Size: 25"L x 2"W x 1"H
Case length: 24" (excluding mounting tabs)
Mounting: Type III, 22-15/16" Centers

UL 4 Ft. Model Specifications

Size: 49"L x 1-1/2"W x 1-3/8"H
Case length: 48" (excluding mounting tabs)
Mounting: Type III, 46-15/16" Centers

UL 6 Ft. Model Specifications

Size: 73"L x 1- 1/2"W x 1-3/8"H
Case length: 72" (excluding mounting tabs)
Mounting: Type III, 70-15/16" Centers

* Models shown with asterisk are CSA Certified

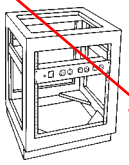
Trimline Series (UL)

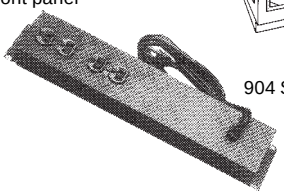
Model Number	Case Length	No.of Outlets	Cord Length	Price
UL7208-6	2 Ft	8	6	$43.14
UL7208-15	2 Ft	8	15	47.34
*UL7408-6	4 Ft	8	6	50.90
*UL-7408-15	4 Ft	8	15	55.15
UL7415-6	4 Ft	15	6	59.78
UL7415-15	4 Ft	15	15	64.03
UL7610-6	6 Ft	10	6	60.85
UL7610-15	6 Ft	10	15	65.10
UL7619-6	6 Ft	19	6	70.95
UL7619-15	6 Ft	19	15	75.15

Rack Mount Series

General Specifications

Maximum rating: 15A, 125VAC, 60Hz, 1875 Watts, continuous duty
Outlets: all units have 6 black "U" ground outlets (3 duplexes)
Case: fabricated steel with back cover; black baked-on finish
Combination black master switch with built-in amber pilot light on front panel
Power supply cord: 14/3 SJT; black with molded plug
Protection: circuit breaker
Dimensions 904: Front plate - 19"L x 3-15/32"W
Back cover - 17"L x 3-11/32"W x 2-3/8"D
Mounting centers - 18-1/4" x 3"
Dimensions 903&911: Front plate - 19"L x 1-23/32"W
Back cover - 17"L x 1-11/16"W x 2-3/8"D
Mounting centers - 18-1/4" x 1 1/4"





904 Series Back View

Rack Mount Series

Model Number	No. Of Outlets F-Front	B-Back	Cord Length	Price
903CB	6F		6	$43.65
903CB-15	6F		15	47.88
904CB	2F,4B		6	48.36
904CB-15	2F,4B		15	52.62
911CB	6B		6	46.08
911CB-15	6B		15	50.33

DATAGARD SURGE AND NOISE SUPPRESSORS

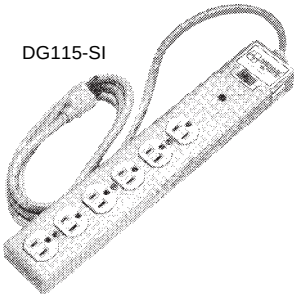
Datagard Office Series

The popular Datagard Office Series is specifically designed to protect computers, P.O.S. terminals, sensitive instrumentation and other electronic equipment containing sensitive microprocessors.

General Specifications

Mounting: Type III DG115-SI
Mounting Centers: 10-78" - DG115SI
Case Color: Cool Grey
Type of cord set: SJT 14/3
Electrical rating: 15A, 125 VAC, 60 Hz, 1875 Watts, continuous duty

DG115-SI



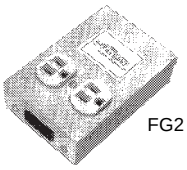
Datagard Office Series

Datagard Gold Plus is designed to protect sensitive electronic communications equipment such as modems, facsimile and answering machines, electronic telephone systems and computers.

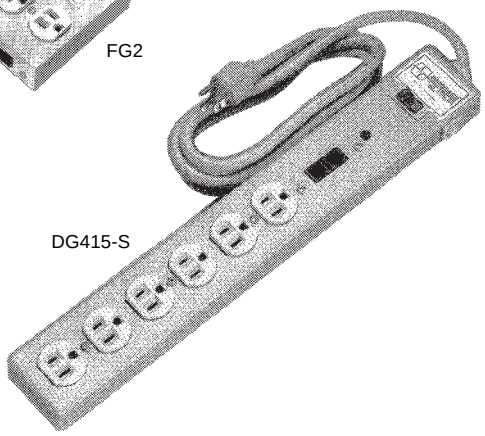
General Specifications

Mounting: Plug-in FG2
Type III - DG415-S
Type of cord set: SJT 14/3
Phone line protection: 2 RJ-11 jacks, 6500A
Ring to ground & Tip to Ground; 1 nsec clamping response
Electrical rating: 15A, 125 VAC, 60Hz, 1875 Watts, continuous duty

FG2



DG415-S



Datagard Economic Series

Datagard economic series provides surge protection for general office equipment such as typewriters, word processors and calculators.

General Specifications

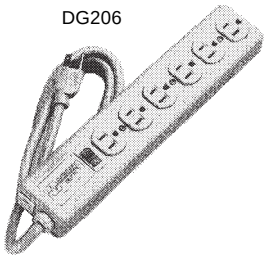
Mounting: Type III - DG204, DG 206
Mounting centers: 10.945" - for both DG204, DG206
Electrical rating: 15A, 125 VAC, 60 Hz, 1875 Watts, continuous duty

DG204

Datagard Series Models

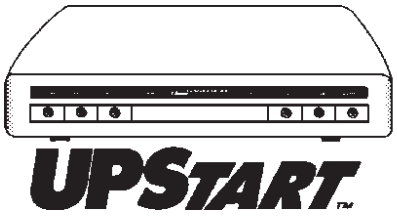
Model Number	No. Of Outlets	Master Switch	Cord Length (ft.)	Circuit Breaker	Dimensions			Price
					Length	Width	Height	
Office Series								
DG115-SI	6	yes	6	yes	11.937"	2.312"	1.50"	49.95
FG2	2	-	-	yes	4-27/32"	3-1/4"	1-5/16"	49.95
DG415-S	6	yes	6	yes	14.50"	2.312"	1.50"	64.95
Economic Series								
DG204	4	yes	6	yes	11.937"	2.312"	1.350"	24.95
DG206	6	yes	6	yes	11.937"	2.312"	1.350"	29.95

DG206



UPSTART 5-IN-1 UNINTERRUPTIBLE POWER CENTER

- Maintains computer operations during power outages
- Electronic Bookmark™ Save and Restores your data
- Safeguards your system from power surges
- Dedicated modem protection
- Controls your system more conveniently



The World's First 5-In1 Uninterruptible Power Center

Model Number NP250 $199.00

UPSTART™ has dual 250VA uninterruptible power outputs which support most MAC and PC systems. Reacts to power failures in less than 4 milliseconds, 5-minute back-up power keeps your computer running during outages or voltage fluctuations, and is powerful enough to support a 150MHz Pentium with a 17" monitor. Has status LED and audible alarm to signal power interruption. Electronic Bookmark™ software, effective with up to 32MB of RAM, saves your files during a power interruption, and on power-up automatically reboots and restores your data. Power Sleep™ allows three simple keystrokes to initiate quickly the UPSTART™ Save and restore feature manually. Gives your computer a true sleep function. (Electronic Bookmark™ and Power Sleep™ not available for Macintosh or DOS-only PC's) DataGard™ protection system has 1-billionth-of-a-second response time to stop surges, even when the master switch is off. Protects against EMI/RFI. Electrostatic discharge plate for quick and safe transfer of charge to ground. LEDs indicate surge protection and grounding status. Solid-state modem protection. Master ON/OFF switch.

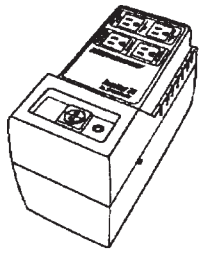
SPECIFICATIONS:

Input voltage: 120V
Input current: 12 Amps
Output voltage: 120V
Computer and monitor output backup power: 250VA/170W
CPU Monitor, Printer, Aux. 1 and Aux.2 output current: 12 Amps
Cord length: 6-foot
Max. detection and transfer time: ≤4 msec.
Low voltage detection level: 95V (+/2%)
Transfer back to AC level: 105V (+/-2%)
High voltage detection level: 137V (+/2%)
Transfer back to AC level: 130V (+/2%)
Battery type: sealed lead acid battery
Typical life expectancy: 3-6 years
Battery rating: 6V 4Ah
Recharge time: less than 2 hours
Number of batteries required for operation: 2

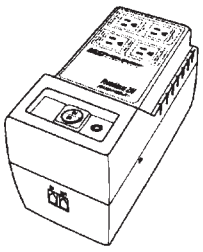
POWERHOUSE UPS SYSTEM

The most advanced technology currently available in power backups. On-board computers constantly monitor the amount of power going to your computer, and warn you if you draw too much power during a brownout or a blackout. Field replaceable and recyclable batteries make it easy for you to keep your system safe at all times. MAC and PC compatible. Two year warranty and $25,000 Connected Equipment Guarantee. UL Listed, CSA Certified.

- Automatic self-testing of internal circuitry and load
- Backup time: 5 minutes at full load, 14 minutes at half load
- True Step-Sine Wave output
- Visual/audible indicators
- Weight: PH250/280T - 7 lbs. PH500/550T - 12 lbs.
- Full recharge time of 2 hours
- Field-replaceable recyclable batteries



PH250



PH280T

Telephone Line Protection (Models PH280T, PH550T)

- Phone Connection: Type RJ11
- Lines Protected: Pins 2 & 3 (tip to ground, ring to ground)
- Lines Connected: 4 (lines 1,2,3,4)
  Phone Cord Length: 6Ft.

Part Number	Rating	Price Each
PH250	250VA	$109.00
PH500	500VA	159.00
*PH280T	280VA	129.00
*PH550T	550VA	179.00

* Advanced solid state protection for modem lines (RJ11)